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Role Stressors and Supports for Emergency Workers

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Alcohol, Drug Abuse, and Mental Health Administration

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National Institute of Mental Health

Role Stressors and Supports for Emergency Workers

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Center for Mental Health Studies of Emergencies

Proceedings from a 1984 Workshop Sponsored by the National Institute of Mental Health and the Federal Emergency Management Agency

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Alcohol, Drug Abuse, and Mental Health Administration

National Institute of Mental Health
5600 Fishers Lane
Rockville, Maryland 20857

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Foreword

These proceedings bring together several of the key papers on role stressors and role supports discussed at a workshop cosponsored by the National Institute of Mental Health (NIMH) and the Federal Emergency Management Agency (FEMA). Held December 6-7, 1984, in Washington, DC, the workshop gathered together researchers and administrators in the emergency field from Federal, State, and private agencies. The purpose of the workshop was to (1) ascertain what is now known about role stressors and conflicts among firefighters, police, emergency medical technicians, and other frontline disaster workers; (2) identify stressors and supports that affect performance of official duties; and (3) identify intervention and prevention programs that assist the individual worker and the emergency organization in better fulfilling their missions.

The monograph begins with an overview of workshop discussions as they relate to research findings and research needs. Questions of short- and long-term effects of stress on emergency workers are not simple. What types of stressors are likely to produce harmful effects on emergency workers? What types of emergency workers are vulnerable to such effects? Importantly, how do these stressors affect emergency workers' functional adequacy on the job? Some partial answers derive from the general literature on stress, others from disaster research itself.

Part I of this volume includes papers on occupational stressors and on natural social supports for emergency workers. Discussed are the nature of the stressors and their variations as determined by origin of the disaster, magnitude of the event, and individual life situations at the time of the disaster. Also discussed is the resilience of individuals, which allows them to cope with and to grow professionally under crisis conditions. While some of the risk factors for stress reactions are known, little has been discovered about individual protective factors.

Part I further points to critical social support systems that can assist the emergency worker. First, the emergency organization itself, through its structure and function, can help workers do their job more efficiently and effectively. Second, the network of community agencies can affirm the value of their work. Third, the families of the workers can reach out to them in their times of stress.

Part II of this volume focuses on intervention and prevention programs to alleviate worker stress. A major need expressed in the workshop was for communication and collaboration between community mental health agencies and emergency management agencies. The need to develop mutual trust and understanding of roles is a critical factor in effective service planning. Emergency workers constitute a normal population working under abnormal conditions. After a major disaster operation, these workers may well benefit from outreach efforts that enable them to express feelings about their recent experiences. And some workers may benefit from additional debriefing and counseling.

Also deemed important by the workshop participants were programs designed to prevent or reduce emotional stress on the job. These programs include training on human responses to disaster and on ways to deal with disaster at a personal level. Further, it was felt that prevention programs must address family concerns of emergency workers as well as include family members in some programmatic activities.

One outcome of the workshop was a better understanding of the specific research needs in this area. Another was an understanding of the importance of communication of new ideas and preliminary research findings between researchers and service providers. Researchers need to ask practitioners for their assistance in defining problems and in suggesting ways of studying them. Practitioners need to continue to develop innovative service delivery models and techniques and to ask researchers for assistance in evaluating them.

All of the participants brought to the workshop thoughtful and important information, issues, and recommendations. Dr. Norman Garmezy provided spirited, insightful leadership as workshop facilitator. Dr. Susan Solomon of NIMH and Dr. Herman Weisman of FEMA provided invaluable assistance as co-project officers for the workshop. Dr. Richard Kilburg of the American Psychological Association skillfully coordinated all workshop activities. The issues and concerns voiced by this workshop group and incorporated in this volume should stimulate other researchers, service providers, and policymakers to continue knowledge development and dissemination in this critical area. Such is our goal in sharing these materials.

Mary Lystad, Ph.D.
Chief, Center for Mental Health
Studies of Emergencies
National Institute of Mental Health

Workshop Participants

Andrew Baum, Ph.D.
Associate Professor of Psychology, School of Medicine
Uniformed Services University of Health Sciences
Bethesda, MD 20014

Thomas E. Drabek, Ph.D.
Professor, Department of Sociology
University of Denver
University Park, CO 80208

Christine M. Dunning, Ph.D.
Associate Professor, Criminal Justice Program
School of Social Welfare
University of Wisconsin-Milwaukee
Milwaukee, WI 53201

Russell R. Dynes, Ph.D.
Professor and Chair, Department of Sociology
University of Delaware
Newark, DE 19711

David L. Eby, M.S.W.
Corporate Planning Analyst
The American Red Cross
Washington, DC 20005

Marge Epperson-Sebour, M.S.W.
Director, Psychosocial Services
Maryland Institute for Emergency Service Systems
Baltimore, MD 21201

George S. Everly, Jr., Ph.D.
Professor, Department of Psychology
Loyola College
Baltimore, MD 21210

Charles R. Figley, Ph.D.
Professor of Family Therapy/Studies, Family Research Institute
Purdue University
West Lafayette, IN 47906

Norman Garmezy, Ph.D.
Professor, Department of Psychology
University of Minnesota
Minneapolis, MN 55455

Bonnie L. Green, Ph.D.
Associate Professor of Psychiatry
Co-Director, Traumatic Stress Study Center
University of Cincinnati
Cincinnati, OH 45221

Don M. Hartsough, Ph.D.
Associate Professor, Department of Psychological Sciences
Purdue University
West LaFayette, IN 47907

Srinika D. Jayaratne, Ph.D.
Associate Professor, School of Social Work
University of Michigan at Ann Arbor
Ann Arbor, MI 48104

E. Erie Jones
Executive Director
Illinois Emergency Services and Disaster Agency
Springfield, IL 62706

Richard Kilburg, Ph.D.
Deputy Executive Officer for Public Affairs
American Psychological Association
Washington, DC 20036

Jeffrey T. Mitchell, Ph.D.
Assistant Professor
Emergency Health Services Department
University of Maryland/Baltimore County
Catonsville, MD 21228

Diane Garaventa Myers, R.N., M.S.N.
Program Manager for Adult Outpatient Services
Marin County, CA, Community Mental Health Program
San Rafael, CA 94901

Richard Sanderson
Deputy Assistant Administrator for External Affairs
U.S. Environmental Protection Agency
Washington, DC 20460

Herbert C. Schulberg, Ph.D.
Professor of Psychiatry and Psychology
University of Pittsburgh School of Medicine
Pittsburgh, PA 15213

Susan Solomon, Ph.D.
Emergency Research Coordinator
Center for Mental Health Studies of Emergencies
National Institute of Mental Health
Rockville, MD 20857

William Staehle
Emergency Management Consultant
Dresdner Associates
Summit, NJ 07901

Herman Weisman, Ph.D.
Senior Scientist
Federal Emergency Management Agency
Washington, DC 20472

Contents

page

Foreword . . . iii
Workshop Participants . . . v
Overview and Research Recommendations . . . 1
Bonnie L. Green

Part I STRESSORS AND SUPPORTS FOR EMERGENCY WORKERS

1. Role Simplification in Disaster . . . 23
Russell R. Dynes
E.L. Quarantelli
A Response . . . 38
Diane Garaventa Myers

2. Emergency Organization Role . . . 48
Don M. Hartsough
A Limited Response by a Practitioner . . . 59
E. Erie Jones

3. Institutional and Political Contexts . . . 60
Thomas E. Drabek
Discussion . . . 76
William J. Staehle

4. Role of the Family: Both Haven and Headache . . 84
Charles R. Figley
Discussion . . . 95
Siri Jayaratne

Part II INTERVENTION AND PREVENTION PROGRAMS

5. Healing the Helper . . . 105
Jeffrey T. Mitchell
A Disaster Worker's Response . . . 119
David L. Eby

6. Prevention of Stress . . . 126
Christine M. Dunning
Response . . . 140
Marge Epperson-Sebour

Overview and Research Recommendations

Bonnie L. Green, Ph.D.

The workshop brought a wide range of issues and concerns to light. The participants struggled with definitions of "role conflict" and "emergency workers." They examined a range of events that might be considered emergencies and wondered about the extent to which continuous exposure to daily stresses was equivalent to a single mass casualty situation in its psychological impact. People spoke of the influence of personality, of family, of the community, and of the organization on the extent to which workers are stressed. Programs aimed at preventing or alleviating worker stress were proposed, elaborated, and critiqued. Some participants felt strongly that most workers are highly affected by the stress of emergencies, while others were not convinced of a pervasive problem. Most participants, however, seemed to feel that discussing the issues was helpful and thought provoking.

A great deal of anecdotal material was presented, along with some research on the topics at hand. It was agreed that relevant research is meager. While investigators have focused more and more on the impact of disasters and other catastrophic events on the psychological well-being of survivors, emergency workers and disaster workers have received little empirical attention in the literature. It is timely, then, to review the issues raised by the workshop participants and to use them to delineate specific areas in need of empirical investigation. Some of these areas have begun to receive research attention; others have not yet been touched. The purpose of this overview is to organize these issues and help define the types of questions that need to be asked.

This overview is divided into five sections. The first section deals with the *psychological-behavioral responses* that have been observed in emergency workers. It takes up the question of who gets defined as an emergency worker, and to what extent the family and the system (organizations) can be seen as responders to the stress of emergencies. Potential differences in response over time are also noted.

The next two sections deal with those factors that are likely to play a role in the extent to which workers experience psychological distress. First, *stressors for the emergency worker* are delineated: those having to do with (a) characteristics of the disaster/emergency event, (b) characteristics and reactions of the organization(s) in which the workers are employed, and (c) a myriad of other specific conditions and circumstances that participants felt had an impact on workers. How these stressors might vary over time is also addressed. Second, *factors likely to mediate the impact of a stressful experience* are discussed: the family as a stressor and as a buffer of stress, organizational and community factors, personality factors, the demands of the emergency worker role, media coverage of the event, and litigation issues.

In the next section, *program suggestions for alleviation or prevention of stress* are briefly described. These include critical incident debriefing procedures, training programs for managers and workers, educational programs, and simulation exercises. The benefits of and problems with these programs that were noted by participants are included.

In each of the above areas, the issues are used to generate research questions that need to be addressed before empirical evidence will be available about the impact of these factors on worker mental health and the efficacy of the approaches suggested for dealing with them.

The final section discusses *general research issues that relate both to problems in studying these phenomena and how findings are communicated to practitioners*. It is hoped that the organization and delineation of the questions raised will aid future researchers in formulating testable hypotheses and in conducting research investigations that will be helpful and pertinent to workers, managers, and those who attempt to help emergency workers cope with their potentially stressful occupations.

Responses to Emergency Work

The major question taken up at the conference addressed the behavioral and emotional impact of disaster or emergency work. Originally the question was formulated in terms of role conflict and whether workers would abandon their jobs to attend to family matters. This quickly expanded to include any emotional or behavioral responses that might be manifested in the short or long term as a response to this type of work. Very little research currently exists to answer these broader questions.

Immediate Responses

A number of papers and discussions focused on immediate reactions to a crisis. Most agreed that role abandonment is rare. Workers generally report to work when they are on duty. A more serious problem is the mass convergence of off-duty workers to the scene of the incident; for various personal and social reasons, workers seem to be drawn to such events. Dr. Dynes presented empirical data from a number of natural disasters showing that role abandonment was very unusual, if it existed at all. However, since his data covered only natural disasters, research is still needed on reporting for duty at the site of manmade or technological catastrophies. Workshop participants felt safe in generalizing from the studies done on natural disasters to crises with similar physical impact, however. Much more caution was expressed on whether people would report for duty in cases of a nuclear accident, toxic waste spill, or other such event where the risk to the worker is unclear.

Role conflict has been evident at an emotional level. Workers have reported feeling torn between going to work and checking on their families or feeling that they are abandoning their families. To the extent that this feeling is short lived and has no noticeable consequences, it may not be of concern. Such dilemmas may, however, have some long-term consequences or express themselves in job dysfunction; that is, the person may show up but not perform optimally once he arrives. At best, this would result in decreased efficiency; at worst, it could endanger lives of civilians or coworkers. Emotional responses could also increase the worker's risk of injury or error.

Another concept of role conflict became a primary focus of the workshop: the conflict between the task the worker must perform to fulfill his role within his organization and the emotional response he may have to the situation itself. Again, workshop participants generally had observed that workers did the tasks at hand, often with a great deal of motivation and efficiency, but that the emotional price this exacted was sometimes quite high, particularly over repeated experiences. In cases where the task was particularly gruesome, such as working with mutilated bodies or body parts, immediate job dysfunction has been observed.

Immediate responses are difficult to study, for both political and practical reasons. However, the extent to which workers break down emotionally or become dysfunctional on the job is clearly of interest. Such information could be elicited in the course of rigorous debriefing.

A number of people who manage workers in the field noted that extended hours and the resulting fatigue may increase job dysfunction or decrease job efficiency. It may be possible to vary working schedules in a systematic way in long-term disaster situations to determine what type of schedule leads to optimal job performance and the worker's sense of well-being.

In summary, the immediate psychological and behavioral responses of emergency workers to a crisis situation are difficult to study. The extent of and circumstances surrounding emotional breakdown or job dysfunction are not now known. While formal research would be difficult to do, relevant data could be systematically gathered during debriefing following a variety of events.

Later Consequences

Empirical work is crucial in assessing the extent and severity of problems that are long term. A variety of latent responses have been reported by different types of workers across various situations. In general, these are anecdotal reports, and very little is known about the incidence of such reactions. Additionally, they tend to be responses that may have occurred at any point after the event and thus are not clearly conceptualized as short- or long-term effects. Few writers have addressed issues of timing of responses.

Workshop participants described a range of worker responses. Several presenters pointed to primarily psychological symptoms such as anxiety, restlessness, depression, and worry or concern. These symptoms may be short lived or may persist over long periods. A few participants specifically mentioned posttraumatic stress disorder as a potential outcome. This particular syndrome involves reexperiencing a critical event in the form of nightmares or unwanted memories that intrude during the day. It also includes symptoms such as withdrawal, decreased interest in activities and surroundings, and emotional blunting. To the extent that nightmares or intrusive thoughts are about a particular event, the link with that event is easy to make. In the case of less specific symptoms, the extent to which they are related either to a particular incident or to chronic stressors may be unclear.

The numbing response can be thought of as a way of coping with the stressful situation, to avoid experiencing its full emotional impact. It has been seen as part of the mechanism that leads to alienation from families or to viewing clients as objects, which is part of the burnout syndrome described by Maslach (1982). Obviously such a chain of reactions has implications for workers' effectiveness on the job, particularly when the job is one where they need to interact with others. In addition, emergency worker jobs have been described as having higher rates of attrition and turnover than many other types of jobs. Thus it would appear that the negative emotional impact of highly stressful job experiences has the potential to affect the ability of workers both to stay on the job and to function adequately on the job if they do stay.

A third potential area for the impact of stressful job experiences is in the worker's physical health. Some workers may "somatisize" their complaints; that is, rather than feeling anxious or depressed, some develop gastrointestinal problems, headaches, or the like. Also, investigators who have studied the physical effects of stress point to resulting functional disturbances in the body that may lead to disease. An associated notion is that workers who experience repeated stressful events may maintain a certain level of hyperalertness or hyperarousal that serves them well during emergency situations but, if not disengaged, becomes a strain on their physical condition.

While there are some anecdotes and a few studies with quantitative data, particularly with regard to police officers, the empirical work on the extent and nature of these types of reactions is sparse. Clearly, more information is needed before the extent of the problem or the highest risk groups of workers will be known. Planning efforts are difficult without this information.

It is also unclear to what extent reactions are short term or long lived and what the relationship is between the two. There is some evidence that short-term reactions are fairly good predictors of long-term responses, but responses may change over time. Long-term impacts may be quite difficult to link causally to a particular event or set of events. Longitudinal studies are needed to provide data prior to and following certain events and to examine the effects of cumulative stress.

The workshop focused both on the critical incident or larger catastrophic event and the accumulated day-to-day stressors. It is unclear at this point whether these very different types of stressors have different psychological outcomes. In addition, distinct worker groups are exposed to different types of stress. Disaster workers may see the large catastrophic events and not be exposed to cumulative incidents. Police officers and emergency medical personnel are exposed continually to potentially life-endangering situations and may even have a larger event superimposed on the more routine ones. Making these distinctions empirically would be difficult but should be attempted.

Definition of Emergency Worker

Finally, while the present discussion and much of the workshop itself focused on the frontline emergency worker, others in the hierarchy experience stress as well. The nature of that stress, and probably the response to it, varies as the emergency worker is more loosely defined. For example, supervisors may also be at risk for negative psychological impacts, although their stressors may be quite different. Such people are sometimes in the position of making critical decisions—decisions with a life-or-death quality or long-term implications—in a very short time and without sufficient data. They are being watched and judged by the media, the public, and the people working under them. They also must deal at an administrative level with other individuals and organizations and must negotiate for territory and resources. All these activities may be challenging and rewarding, as are those of emergency workers themselves, but they are inherently stressful. Thus, a need clearly exists for some attention to others besides the frontline worker when studying the impact of disasters or emergency work.

The organizations themselves may also be thought of as respondents; thus the impact of such events on social systems needs to be studied as well. Following catastrophic events, groups and organizations may emerge or may cease to function. They may modify their procedures to be more effective in the next situation. Following a critical event, they may provide support to their employees by sanctioning psychologically oriented recovery efforts. They may become aware that they need more formalized planning procedures with increased interorganizational dialog. Such activities have implications not only for the roles of individuals within these organizations but for organizational function and structure as well. Such changes are also of interest and should be studied empirically.

Stressors for Emergency Workers

If emergency work is stressful, as many conference participants believe, what are the specific events and situations that make it so? Not all aspects of emergency work are stressful; emergency work can be gratifying and give people a sense of accomplishment and competence. Yet workshop participants and other investigators have reached some agreement about the types of events that are more likely to put people at high risk for psychological problems. Most of the research in this area has been done on survivors of disasters or individual catastrophic events. Emergency workers also need to be studied, since some types of stressors apply only to them.

One distinction that can be made is between stresses that are part of or inherent to the disastrous event itself and those that arise in other ways, for example, organizational strains or pressures that may add to stress or even cause it de novo. The nature of stressors may vary across types of events and across stages in the life cycle of a disaster.

Characteristics of the Event

The workshop participants named a wide range of events that are likely to have an emotional impact on emergency workers. Those types of incidents most often cited had to do with observing death, particularly many deaths or those of a particularly bizarre or gruesome nature. Death of persons known to the emergency worker, like coworkers or friends, was also mentioned as highly stressful, as was death of a civilian due to emergency intervention or death of a victim being rescued. Situations where workers really have no rescue role even though they are trained for such work is seen as highly stressful, for example, being sent in to clean up after an event with no survivors. Survivors or not, incidents where people died in a way that was mutilating, such as in some airline crashes or the Kansas City skywalk collapse, were noted to be highly stressful and to put workers at risk for emotional reactions in the short and long run. These types of events have been shown to be stressful in civilian and military populations and are likely to similarly affect emergency workers.

A situation where the worker's life is threatened also seems to be an area of concern, although it could be argued that emergency workers are trained for such events, so that threat per se may not be a good predictor of outcome with this particular group. On the other hand, to the extent that the threats occur unpredictably, they may cause distress. Also, physical danger is not the only type of threat; threats to one's view of self or sense of competence or self-esteem based on behavior during an incident may also be problematic and put people at risk for later impairment.

These types of stressful events are amenable to research because they can be studied within a particular situation. That is, while some of the events listed may happen to a whole group of emergency workers, differences are likely to occur from worker to worker in the extent of exposure or involvement because of differences in assignment or rank. To the extent that these differences can be delineated, they may be examined for differential outcome in their emotional impact. For example, what is the long-range outcome for police officers who have lost partners versus those who have not; for those who have killed civilians in the line of duty versus those who have not; for workers who have had to do body cleanup after a gruesome accident versus those who have not?

Another dimension discussed by workshop participants is the extent and nature of role demands during a disaster. Dr. Dynes argued that role demands are reduced, since some community roles—such as production/distribution of goods and socialization functions—become irrelevant or much less important during a disaster. Dr. Dunning argued that in a natural disaster, role demands per se may increase for the workers because they need to be concerned not only with their routine roles, but also with their disaster roles and with the safety of family and friends as well. They may be seen as having more information than others and thus may additionally be asked to serve in a communication/dissemination role. Questions on the nature and extent of role demands on emergency workers during a disaster is clearly of empirical interest and could be studied in a fashion similar to that reported by Dynes and Quarantelli (1980) in their work on role abandonment.

A number of other potentially stressful characteristics of a disastrous event were also mentioned. One had to do with the *scope* of the event—does it affect the entire community or just part of the community? What resources can be brought to bear; are community resources themselves sufficient or must help be brought in from the outside? To what extent does it affect workers' home and family situations? What is the *location* of the disaster? Is it away from home or in the community? Having to leave the family to go to work offsite could conceivably make things easier or more difficult for the worker. Information needs to be gathered to address such concerns.

Cross-Hazard Generalizability

A number of workshop participants raised the issue of generalizability of research findings across disasters. Recent types of incidents might be qualitatively different in terms of their characteristics, specifically, events involving radioactive materials. Nuclear accidents, such as Three Mile Island (TMI), and potential incidents such as nuclear meltdown were used as examples. Most of the research in the area has been on natural disasters, with less emphasis on technological disasters. In general, it was felt that many generalizations were possible across these two types but that generalizations might break down when toxic materials were involved, particularly nuclear materials. With regard to role abandonment, for example, participants questioned whether the usual commitment to reporting for emergency roles would remain in such an event.

Dr. Baum suggested that technological or human-made disasters often have the characteristics of toxicity and loss of control over technology. In addition, particularly with regard to events like TMI or toxic waste spills, the point at which the damage is over is unclear, and the future impact (e.g., genetic damage) is unknown. On the other hand, these events are *not* characterized in the same ways that make more traditional disasters particularly stressful—large numbers of deaths, community disruption, property destruction. Rather, the focus may need to be on the impact of fears about exposure and the future consequences of exposure. How much may people be exposing themselves to increased risk by going near the site for emergency operations? To what extent is their family in continued danger by staying in the geographic area? How credible is the official information being released about the incident? To what extent are the authorities in command considered legitimate and competent? It is not known how these issues would affect either the immediate behaviors (such as reporting for duty) or feelings of the emergency worker, or his long-term emotional adjustment. Some anecdotal data is available on small groups of emergency personnel at TMI, but more systematic research is needed. At present, planning for such events is difficult because of the lack of information and the suspicion that findings from other types of events may not apply.

Another less dramatic cross-event question has to do with the extent to which training in day-to-day activities will carry over to a mass casualty situation. Even if people are used to working with dying and injured people and are trained to function in stressful situations, will they be prepared for the larger event with multiple deaths or widespread community disruption? It is not clear how well people can be trained for such events.

Organizational or Job-Related Stressors

Aside from the characteristics of the disaster or the critical event itself, other stressors arise out of the structure of the emergency organization or the role of the emergency worker. For individuals who do frontline emergency work on a regular basis, such as police or emergency medical personnel, the cumulative stresses over time and the characteristics of the job itself may be of more concern than the characteristics of any specific incident. For other types of workers, such as people in management and coordinator roles, the stressors of the job may be almost entirely of this nature.

For managers, interorganizational struggles over turf authority and liability may be highly stressful. Lines of responsibility within organizations may be fairly clear, but when organizations that do not usually work together need to cooperate in the context of a disaster, strain may result. As mentioned, the responsibility for large numbers of people, quick decisionmaking with less than complete information, and being under public scrutiny are likely to be stressful. Other potential stressors for emergency coordinators that participants mentioned include lack of command authority, low visibility, low funding, being associated with civil defense, and the part-time or voluntary nature of the position.

For frontline workers, some stressors specific to the disaster situation include changes in procedure, the client's culture or language if not the same as the worker, climate, lack of adequate lodging or support services, and community acceptance. Long work hours leading to extreme fatigue constitute a very important aspect of job stress during disaster work.

Another organizational factor that could potentially lead to stress is the nature of the organization, i.e., does it only have responsibility during a disaster or are personnel used to emergencies and trained for them? The potential for chaos and confusion is, of course, higher in the former situation. The size of the organization is also important to the extent that responsibilities may be increased during a disaster, i.e., can the organization absorb new tasks easily or rearrange them, or do new demands exceed its capabilities?

Other potential stressors are connected to the nature of the jobs themselves. For example, stressors that were identified as applicable to police jobs but that clearly relate to other emergency worker jobs as well include erratic work schedules, having to interact with the criminal justice system, the pressure of having to make split-second life-and-death decisions, and responsibility for the well-being of others.

The potential stressors in emergency situations are myriad, depending upon the nature of the event itself, the nature of the position that the person has in the organization, characteristics of the organization, and the nature of the job. While a few investigators have raised questions about the impact of some of these differences, by and large little research to date has attempted to study such questions. Not every study can, in fact, address a range of stressors. However, each study could be clear about the types of stress being studied, examine witness differences, and discuss the generalizability of the findings.

Stressors Across Time

Stressors may vary depending upon where in the life cycle of the disaster one focuses. In his presentation, Dr. Drabek delineated stressors that are likely to be present at the various stages: mitigation, preparedness, response, and recovery. It is helpful to note that not only responses to disaster and emergency need to be viewed over time, but that the stressors themselves change as one moves from the early phases of a disaster or critical incident to the later phases of response and recovery. The stressors may not end when the event is over. Research should not be limited to the impact phase.

Mediators of Stress

External stressors are not the only determinants of who suffers psychological problems. Given the same stressor, people respond differently. Aspects of the person who experiences the stress and aspects of the recovery environment of the individual exposed to a stressful event also vary and affect how the event (or events) are emotionally and cognitively processed (Green et al. 1985). More empirical attention to the variables that mediate the response to stress will help in understanding the stress-response process, promoting recovery, and preventing long-term problems.

Role of the Emergency Worker

Emergency workers bring many personal strengths to their jobs. Aspects of the job and of the people who choose this work, however, may make recovery or stress management more difficult. At present, some research evidence exists about *who* chooses to do emergency work in the first place and about *how* emergency workers behave following particularly stressful events. Much more empirical work is needed before a good understanding of these issues can be reached.

While the presentations and discussions at the workshop tended to focus on negative outcomes, a number of participants did point out the positive aspects of the emergency worker role as well as the strengths of emergency workers. These professions are service oriented, and the roles can be described in part in terms of altruism, courage, and a wish to serve one's fellow man. While these motives may not predominate in all workers, they should not be overlooked or minimized as potentially powerful motivators. As noted previously, for example, workers may converge to the scene of a disaster and may work to the point of overfatigue. While these phenomena have a number of potential explanations, the wish to help is definitely one. In addition, not all aspects of the work are traumatic or stressful. Workshop participants described the enthusiasm and sense of purpose workers feel during the response to disaster. Often workers become like family to each other, being supportive and enjoying the shared experience. For emergency medical personnel, the increased responsibilities of dealing with life-and-death issues, along with learning new and varied skills and increasing self-esteem, are seen as job attractions and challenges.

On the other hand, some of the characteristics that enable individuals to function well during an emergency may impede their recovery from a traumatic event. Dr. Hartsough focused his presentation on the conflict between these two roles: the worker as on-the-scene respondent, and the worker as the one who needs to recover. For effective job performance, the personal orientation and the role requirements of emergency workers are compatible: a "task and tool" orientation focusing on problems and resources, a high level of self-control and suppression of anxiety and fear including keeping feelings to oneself, and high self-expectations. For recovery, however, different characteristics are needed: allowing emotions to surface and be expressed and sharing feelings of vulnerability with others. These actions appear to be more difficult for workers. Seeking out others for help and support has been shown to be infrequent in the general population but appears to be even less frequent in emergency and rescue personnel. To the extent that acknowledging emotions and discussing feelings of vulnerability are helpful to recovery and that workers are reluctant to engage in such actions, a potential problem exists. Such descriptions of workers' difficulties should first be validated; if they are, research and programmatic efforts need to be targeted to factors that are likely to maximize the probabilities of workers engaging in this emotional expression. Emergency organizations and families may help or may impede the worker in this process.

Personality Factors

Individuals bring a variety of strengths and weaknesses to the role of emergency worker. Aspects of personality that help or hinder this work, and the capacity to withstand stress, were of high interest to the workshop group. The question of why some people are more resilient than others was raised. While little empirical literature exists on this issue with regard to emergency workers per se, a great deal of research addresses it in the general population and in survivors of traumatic experiences. Personal characteristics that have been shown to relate to outcome in such circumstances are educational level, social/cultural factors, previous levels of exposure and previous experiences, levels of self-esteem and expectations about one's role and efficacy, and coping techniques. Variability in these factors is likely in the emergency worker population and could be associated with doing better or worse on the job; studies on such variability are needed.

Several participants noted that a great deal of self-selection occurs that can be seen in high turnover rates. Characteristics of those who stay on the job and those who leave after short periods of time can and should be studied. Not only will this help in training and dealing with responses to stressful events, but it will also help refine selection procedures. People probably can be selected and trained for resiliency, and secondary prevention efforts aimed at enhancing coping techniques are being developed with these notions in mind.

Organizational Factors

Dr. Hartsough pointed out the role of the organization in influencing behavior. The organization is a potentially potent force in preventing stress and in providing a recovery environment for workers that minimizes the negative impact of stressful experiences. Organizations have the power to determine roles and purposes of the emergency worker, define expectations of performance in the workplace, and sanction or prohibit behaviors related to job performance. A number of workshop participants pointed out the importance of the organization in sanctioning a recovery role for the worker and in allowing the worker to participate in programs aimed at prevention and recovery. These recovery programs were seen as ineffective without organizational sanction. Many organizations have provided such support for workers and structured jobs and work activities in ways that appear optimal to worker mental health. Planning activities of the organization are crucial in this regard. Several participants felt strongly that better planning for disaster and emergency activities was the primary factor in preventing long-term problems in workers. Yet planning efforts are seldom studied. The natural time to begin studying the impact of changes on the organization and on the individual is when changes are planned, since before and after measures of performance, satisfaction, and so forth would be possible.

The emergency organization may be seen as having a personality of its own that resembles in some ways the personality of the emergency worker. Those factors in the emergency worker role that make emotional recovery difficult may be present at a group level in the organization. The norms and expectations of nonexpression of feelings, i.e., silence, is one such factor. Another factor is the distant relationship between emergency organizations and mental health organizations. Thus, in many cases organizations may work against the natural recovery process following traumatic events. Also, because workers as a group continue to perform well, organizational management may not see the need for recovery programs. This underlines the importance of documenting the extent of *need* for such programs and for evaluating their efficacy.

The posture of the organization toward emotional expression and the level of support for workers need to be explored. While many see this as a very important factor in recovery from traumatic experiences, little documentation exists. How do official and unofficial attitudes interact? For example, are programs offered and people who use them then stigmatized? Reactions, official and unofficial, to the range of worker responses need to be studied. In addition, some management styles minimize worker stress to begin with, and variables like employee participation in decisionmaking and responsivenes of management to employee concerns may be predictive of better or worse mental health outcomes. These factors have been shown to make a difference in other work settings and should be explored in the context of the emergency organization.

Family

Is the family a stressor or a support system or a buffer of stress? A number of workshop participants addressed the importance of raising this question and directing some research to this area. Families may or may not be supportive of the worker's job responsibilities. Stressors at home, like problems in the marital relationship, may contribute to diminished performance on the job. On the other hand, families may support the worker, provide an environment that is conducive to recovery, and identify problems as well.

The family also responds to stress. It may react to specific experiences in the life of the emergency worker or to cumulative experiences that may exert a more indirect effect on the emotional and social interactions of the worker. In general, family members tend to be viewed by emergency organizations as outsiders for whom they have no responsibility. However, a number of participants pointed to the importance of including the family in efforts to prevent and alleviate stress, and noted the potential benefits for the organization of recognizing the family as an important factor in the long-range performance of the emergency worker. However, research is needed on the family's contribution, both in negative and positive ways, to emergency worker job performance and well-being. The extent to which the family becomes distressed itself, either directly or indirectly because of the worker's role, is also important. Some research has been done in this area, e.g., studying spouses of police officers, but much more is needed. What characteristics of families help workers perform their jobs, and what characteristics impede their optimal functioning? Are some workers at higher risk for problems because of their family situations? These areas can and should be addressed empirically.

Community and Social Factors

A mediating factor that has received some empirical attention is social support. Families can, of course, be seen as sources of social support, but support may be conceived more broadly as coming from family, friends, coworkers, and the community at large. Research has tended to corroborate the positive mediating effects of social support in the general population, but its effects on emergency workers need to be studied. The previously noted tendency of workers to avoid discussing problems may mean that social/emotional support for workers only rarely occurs spontaneously. Use of such supports and its effect on outcome thus need to be explored. Some components of support may be more easily accessed by workers: for example, tangible aid may be easier to accept than emotional support.

On a broader level, the community at large and the systems and organizations within it can be seen as potentially powerful mediators of the effects of stressful experiences on emergency workers. The media as interpreters of events and disseminators of information are seen as potential stressors for workers, sometimes more potent than the event itself, as they often operate through the constructs of blame. Was anyone at fault who could have prevented the disaster/emergency or who could have handled the rescue or recovery better? Communities tend to form opinions on these matters, often based on information they receive from newspapers, radio, or television. Thus, the media have the potential power to hinder or facilitate the recovery process for survivors and workers alike. While the impact of media coverage is difficult to isolate experimentally, some systematic information could be gathered in this regard. In addition, attempts to enhance dialog, and educational efforts directed at more interaction between media and disaster agencies, could be examined.

Blame may also be a factor in the smaller community of the emergency organization. If someone in the organization is viewed as having erred during the response to an emergency, either by giving the wrong directive or by not optimally executing aspects of the rescue, this has a high potential for psychological impact, not only on the individuals involved but also on the organization.

A related issue is liability and litigation. Who is legally responsible for what happened, either before or during the event or during the rescue effort? The fear of legal liability in the present society, where litigation of this sort is on the rise, is likely to affect the workers, even if they and the organization never become involved in actual litigation. If litigation does occur, the impact is likely to be more forceful. The effects of litigation as a stressor and mediator need further study.

Programs for Alleviation and Prevention of Stress

The final research area in emergency worker mental health addresses those programs targeted for the prevention of highly stressful experiences and the alleviation of any stress resulting from emergency activities. The questions and issues raised fall under the broad rubric of program evaluation. As research increases in more basic aspects of the problems of stressful experience for workers, ways of addressing and alleviating the problems should become more apparent. A number of programs were suggested at the workshop; with few exceptions, none has been evaluated for its efficacy, either in the extent to which it is helpful or in the mechanisms by which it has an impact. More research is needed in this area.

Alleviation of Stress

Only one program aimed at alleviating stress was discussed at the workshop in any detail: the Critical Incident Stress Debriefing (CISD) developed by Dr. Mitchell and described in these proceedings in three papers (Hartsough, Mitchell, and Dunning). Basically, it is a group procedure for medical emergency personnel involved in a critical incident. The debriefing takes several hours and is held as soon after the incident as possible, optimally within a few days. Its purpose is to allow ventilation of intense emotions, provide support for the worker, educate the worker about stress reactions and their normality under extreme circumstances, instill a cognitive or symbolic understanding of the event, begin the process of working through the event, and inform about more chronic reactions that could occur. With organizational sanction, such debriefing may be educational to all involved. From the standpoint of demonstrating the inevitability of emotional reactions to such events, it may highlight reasons for organization malfunction and may even help in revising old procedures or generating new ones. It may also launch or further a social network for coworkers.

While there were enthusiastic endorsements of the debriefing, most participants called for research on the extent to which it is helpful and why it is helpful. They stated that the feasibility of its implementation also needs to be explored. Implementation relates not only to the relationships between the mental health and emergency organizations, but also to the size of the emergency department or organization. The feasibility of such a procedure in a small community or very small department was questioned. How and whether the debriefing would work under such circumstances needs to be explored before its general applicability is known.

A number of issues came up regarding the relationship between the mental health community and emergency organizations. Do relationships between these two types of organizations exist so that a cooperative effort is possible? Preplanning was deemed important. More fundamentally, emergency workers' general distrust of mental health personnel was noted. If the mental health of emergency workers is a problem in the ways discussed at the conference, this distrust is a notable impediment to helping workers. Research regarding the roots of these attitudes and some programmatic efforts at interactions between the groups would be helpful.

Who are appropriate persons to conduct the debriefing? While a mental health professional is the recommended leader, practical issues as well as the distrust problems led the group to explore alternatives. Pros and cons of people within the organization conducting the debriefing were noted, and use of indigenous community resources such as clergy was suggested. Another possible variation is a training team—one member of the mental health community and one member of the emergency organization—to run the sessions. These different means of implementation need to be explored, both for how they are received and how helpful they are. Maximally therapeutic personality characteristics of the debriefing leader also need examination. Not raised at the workshop but also of importance is the optimal depth of the intervention. How hard should people be pushed to ventilate in front of the group—at what level should people be encouraged to express their feelings? What level of intimacy is optimal for both the recovery process and continued coworker interaction around job tasks?

While other more traditional types of treatments were not discussed, they too need to be explored. One purpose of the debriefing and of organizational efforts toward the psychological well-being of the emergency worker is to identify workers at risk for problems or workers who have begun to show signs of a negative response (e.g., burnout, depression). These workers can be referred to more traditional sources for counseling, but issues about repeated exposure to and long-term impact of stressful experiences need to be explored in the context of therapeutic experiences as well. Who chooses to utilize treatment and how organizations influence those decisions also need study. It may not be the most impaired people who make use of such treatment. On the other hand, if organizational sanctions discourage treatment, people who would benefit from it may not avail themselves. A positive aspect of CISD is that it can be required for all participants, eliminating the need for people to be defined or to define themselves as in need of psychological help.

Finally, a similar procedure for individual critical incidents is also important to explore. For example, if an officer shoots a civilian in the line of duty, he or she may be in need of a psychological debriefing of a similar nature to the CISD described above. Individual debriefings may be more difficult to implement than group procedures, however.

Prevention of Stress

The Critical Incident Stress Debriefing can be thought of as directed toward either the alleviation of short-term stress or the prevention of long-term problems. Some participants at the conference focused on primary prevention efforts that might keep persons from experiencing some of the stress in the first place or that might enhance efforts at dealing with the situations that confront them. One set of programs aims at changing the external situation through better planning and organization, and another set aims at educating the worker about psychological issues. Ideally, both types of interventions should be considered, as they are not really alternatives.

Training programs and exercises. One way to decrease the negative psychological consequences of stressful situations is to reduce the actual stresses of the situations. Efforts in this direction include long-range planning, training programs for handling critical situations, and simulations of events such as rescue operations and evacuation procedures. Such procedures reduce the risk of things going wrong or being chaotic when a real event occurs. Planning for as yet unknown events may be difficult, since people may be reluctant to acknowledge the possibilities and personnel in such situations may be temporary or volunteer and have other more pressing obligations. In organizations whose usual function is emergency work, planning is probably easier.

A number of participants discussed the benefits of simulation exercises for debugging and tightening procedures and preparing workers and managers for events to come. These exercises test the performance of the system under close to actual emergency conditions. They increase familiarity with what can occur, help identify problems and deficiencies that can be remedied, and give a better overall understanding of the multiorganizational response network and the strains that may arise during an actual emergency. These exercises also force the issue of interagency cooperation. In gearing up for them, meetings are needed to review plans and tighten procedures. Such interagency interactions can increase positive collaboration among agencies. Additionally, preplanning can help managers in their multiorganizational coordination.

To date, the benefits of these exercises have not been researched. However, the benefits of having any simulation exercise could easily be studied from the standpoint of what people learn, what problems are identified and solutions pursued, and whether people feel more prepared. Studying the effects on the efficiency of later actual emergencies is more difficult but not impossible. Simulation of some emergencies or of some components of emergency response may not be possible or anticipated beforehand, so that instances of no previous simulation are bound to occur. The smoothness and efficiency of the practiced vs. nonpracticed aspects could be examined in a case-study approach.

Another stress-reducing intervention is education about liability. Workers are unlikely to understand all the issues involved and the limits of their own liability. While ignorance may have been bliss in an earlier time, with risk of litigation increasing, education about potential problems can reduce both the concern about and likelihood of litigation. As such programs are initiated, they should be evaluated for the actual knowledge they impart as well as for the psychological impact of better understanding the issues.

***Educational efforts in psychological prevention*.** Ms. Epperson-Sebour discussed programs targeted toward worker understanding of stressors and psychological responses to them and techniques of personal stress management. Behavior courses could cover how one's emotional state affects job performance, how stress affects personal relationships, motivations for entering these professions, job expectations, and role functions. Stress management courses could cover stress reduction, behavioral and physical consequences of unresolved stress, and how to develop a personal plan for stress reduction.

Other suggested courses or workshops are in problem solving, communications skill development, and assertiveness training. The emergency organization could also sponsor or encourage informal support groups.

While the suggestions described above could be beneficial, evaluations should determine their efficacy. They may all be needed, some may be alternatives to others, some may be more important than others. In looking at their impact, the effects over time on both the worker and the organization need examination. How people feel about having taken these courses and participated in these programs is easy to ascertain. More important, however, are the long-term psychological and physical/behavioral consequences such as depression, alcoholism, heart disease, and burnout. Do these programs allow benefits to accrue to the organization in the form of lower turnover rates and better quality of service? These can all be studied empirically.

A final area of prevention discussed at the conference involved programs for families of workers. These include family education programs and discussion within the CISD procedure of how to talk with family members about the incident. Setting up spouse support networks was also suggested to increase understanding of what the spouse is going through, to decrease isolation felt by family members, and to help families validate their own experiences and interactions with their worker member. As these types of programs become implemented, empirical attention should be paid to their impact on workers, families, and organizations.

General Research Issues

The major content areas of the workshop and the research needs in those areas have been delineated. A few more general issues remain, however, that need to be kept in mind when doing such research.

The first general issue is linking critical incidents and chronic stressors to long-term dysfunction—a particularly difficult task for a number of reasons. First, emergency workers are not usually exposed to these stresses in a vacuum. For many, particularly difficult incidents are superimposed on more day-to-day low-level stressors that arise from job-related experience and from characteristics of the job itself. Sorting out differential effects of these low-level stressors is practically impossible. However, several strategies are available for targeting differential effects; some of these were mentioned earlier. Comparing individuals within organizations who have and have not been exposed to certain kinds of stressors is not extremely difficult to accomplish, nor is comparing people with different types of tasks and job assignments. Such research will help to pinpoint who is most at risk based on what they do.

More is needed in the way of comparing agency or organizational statistics to general figures. Are disease rates, divorce rates, alcoholism, and so forth higher than in the general population? Although such studies may identify that problems exist, they are not capable of pinpointing specific causes. For example, if higher divorce rates are found, this could be due to exposure to traumatic experiences or to unusual or long working hours.

Tracking problems over time within organizations is also important. Baseline data is crucial if one is interested in trying to follow the impact of certain incidents on the organization, or the impact of changes like reorganization or training programs. Workers can also be assessed in a number of areas when they arrive on the job. Individual differences over time can be examined, both at a group level and as they relate to particular types of experiences or assignments.

Much of this research can be done with relatively little expense and time investment by taking advantage of opportunities for easy data collection and by making use of data already gathered. However, more definitive and larger scale studies are also needed and will require external funding and additional personnel.

The emergency organization's enthusiasm for such research efforts is critical. Even the most modest research efforts will be difficult without its support. Much attention should be devoted to laying the groundwork for such efforts. Managers are not convinced of serious problems in the area of emergency worker stress, nor should they be since the research is very scant. Workers with problems may be viewed as "weak sisters" who are the exception rather than the rule and who need to be dismissed. Dialog about these issues is important.

Some types of worker experiences or assignments may not be problematic. In areas where problems exist, however, costs to the organization are in turnover and lower quality of job performance. Pinpointing the problem areas will prevent wasted resources and increase efficiency. Finding out who does better and worse for reasons other than job experiences or personal characteristics, such as cultural values of work, will help in fine-tuning screening procedures. Thus, laying the groundwork for research and programs becomes an important area of dialog between managers, workers, and health professionals. Efforts should be directed to specific questions with specific answers (i.e., *which* workers, *which* experiences) if progress is to be made.

These issues also apply to questions raised at the organizational level, to the impact of events and worker responses on organizational structure and function over time. Interorganizational issues across time need to be studied and documented as well. Questions should be formulated in such a way that the answers do not have win/lose implications, but rather provide helpful information for planning and enhance the organization's sense of responsibility for examining its own behavior.

Finally, how results of empirical studies are communicated is critical. As long as investigators talk to and write for each other in a conceptual and language system known only to them, their findings will be of little use to the person in the field. Thus, studies should be designed to answer practical questions as well as theoretical ones (the best studies will do both), and attention should be paid to writing and communicating findings in a clear and useful way. Conclusions need to be carefully drawn, implications carefully stated. A variety of avenues for dissemination should be explored. Active interchange between researchers and practitioners is likely to yield the most relevant and most useful research findings.

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Part I

STRESSORS AND SUPPORTS FOR EMERGENCY WORKERS

1. Role Simplification in Disaster

Russell R. Dynes, Ph.D.
E. L. Quarantelli, Ph.D.

The notion of role conflict and its consequences in emergencies introduces a problem in conceptualization and empirical documentation. It is also a problem in the sociology of knowledge and in the sociology of science as to how both facts and interpretations develop truth value in the scientific and policy communities. Much of this paper relates to the first issue and only incidental attention is given to the second.

Background

It is a standard sociological view that human beings play multiple roles. Implicit in that conceptualization is that a person, on occasion, may be called on to play conflicting or competing roles. Thus the concept of role conflict based on the possible incongruity of multiple roles is periodically addressed in the literature.

Role conflict was one of the first sociological concepts used in the area of disaster study. In 1952, Lewis Killian published the "Significance of Multiple Group Membership in Disaster," which has been widely quoted and cited ever since. Killian's intent was to develop a typology that might generalize to situations other than disaster. He identified four types of potential dilemmas of loyalty. First, he pointed out the choice between the family and other groups, principally the employment group or the community, and explained that this was the most common type of role conflict. Second, he noted the conflict to those faced with playing the heroic role of rescue worker in contrast to fulfilling occupational roles. Third, he discussed the conflict between the loyalty of employees to the company as an organization, as opposed to loyalties to fellow employees as friends and human beings. Fourth, he cited the conflict between loyalties to the community vs. certain extracommunity groups.

In each of these cases, Killian suggested the choice between conflicting demands made by the person may have serious consequences for the reorganization of the community and, in general, proposed that primary groups have the advantage in a conflict of loyalties. Other researchers subsequently picked up the idea of role conflict as an explanatory concept and added anecdotal evidence that reinforced his findings. Most studies, however, were unclear about the concept of role as well as uncertain about the effects on actual behavior, but case study anecdotes of someone's personal dilemmas gave a sense of reality to the concept. Killian, however, in the original article, was more cautious. While he suggested that negative consequences could occur and implied that people do abandon their roles in favor of the family, he concluded, paradoxically, that the resolution did not have the negative consequences one would have anticipated. He said, "...yet in none of the four community studies did the disastrous consequences contemplated...seem to have materialized" (Killian 1952, p. 311).

The implication of "family first" that was drawn from the discussion of role conflict was perhaps inadvertently reinforced by another theme in earlier research. That theme was the continuing and perhaps enhanced functions of the family in disasters. In the fifites, a rather standard interpretation stated that industrialization had defunctionalized the family. That interpretation was not supported by early studies on disaster. Quarantelli (1960) summarized about 50 different reports containing observations that the extended family was still a major source of support to which disaster victims turned for help, and concluded that the protective function of the family was still important, in contrast to the standard view. Consequently, the enhanced importance of the family in disaster situations was interpreted by many as heightening the conditions that produce role conflict.

Subsequently, the concept of role conflict and the notion of the continuing importance of the family were combined to become a part of the conventional wisdom of the social sciences. Since most social scientists are teachers or textbook authors, striking illustrations of concepts are scarce. Role conflict, however, could always be illustrated by the conclusion that much of the seeming disorganization in emergencies was created by persons in panic flight to join their families. This conventional wisdom had other consequences. Following the logic that serious manpower losses would occur in emergencies, emergency planning efforts often were based on the assumption that strong authoritarian efforts would be necessary to overcome this weakness, while others concluded that any type of emergency planning would be impossible. In addition, role conflict came to be used as an ad hoc generic explanation to interpret almost every problem in emergencies.

Conventional wisdom, of course, is usually impervious to evidence since it is easily supported by anecdotes and the logic of common sense. Contrary evidence is always seen as an exception that can be explained away on other grounds. Consequently, Killian's conceptual article continues to be cited as proof so as to close the book on the discussion. Two studies, however, suggest that role conflict is *not* an important causal factor in the ability of individuals to perform duties in emergency organizations.

Empirical Observations of Role Behavior in Emergency Situations

The first of these studies was done by Meda White for the Disaster Study Group, National Academy of Sciences/National Research Council (1962). In observing the fact that many of the illustrations used by Killian focused on persons whose roles in emergency activity were unclear (e.g., refinery workers, ministers), White decided to study persons who had definite role responsibility in disaster-activated organizations. She selected three tornado-struck communities (Waco, Flint, Worcester) because tornado was the disaster agent Killian had used for his examples. She then interviewed organizational members who had role-defined responsibility during these emergencies.

She selected a number of organizations: city government, police and fire departments, state police, power company, gas company, radio stations, Red Cross, Salvation Army, and civil defense. In each organization, the *de jure* leaders of the organization during the disaster were interviewed, as well as one organizational member of middle rank and three of lower rank chosen by the every eighth name method.

White managed to complete 126 interviews. While her interviewing took place some 8 years after the events, she concluded that "not a single person abandoned ongoing disaster work to be with his family." Even taking into account the possibility of memory distortion, this is scarcely the type of resolution that would have been anticipated, given the prevailing assumptions about the usual consequences of role conflict.

In the sample, she found that 77 percent did their jobs first, without diversion to family roles. Another 5 percent did rescue work as individuals, rather than as organizational members. Others at home at the time of impact did disaster-related activity there and then reported to work. In all, by the end of 4 hours, 89 percent had been engaged in disaster-related activities and, again, not a single person had abandoned ongoing disaster work to be with his/her family.

When we began our own systematic research on disaster in 1963, we were aware of White's research. On the other hand, her findings were contrary to the conventional wisdom. Since our research focus was on emergency organizations, we still anticipated that role conflict might be problematic, and we were sensitive to possible indications of it. However, in examining over 150 different disaster events and in the course of interviewing over 7,000 different organizational officials, role conflict did not emerge as a problem.

In fact, over the years of field work, even anecdotal evidence about such problems in emergency organizations was nonexistent. On the contrary, excess manpower was frequently problematic.

Since there was such a discrepancy between the conventional wisdom and our own field experience, we decided to look more closely at a number of cases with the intent of better documenting what was commonly "known" about role conflict. We had, over the years, collected detailed descriptions about the behavior of a large number of role incumbents in a variety of types of organizations in several types of disaster events.

Various disaster agents have characteristics with differential implications for behavior. We tried, then, to choose sites that provided some contrast in disaster agents. For example, both floods and hurricanes usually are preceded by a buildup that allows time for warning and subsequent preparation for impact. This would mean that some of the potential consequences of role conflict could be anticipated and perhaps avoided. On the other hand, both of these disaster agents create a wide scope of impact and, therefore, are likely to create situations that may involve both work and family situations. Tornadoes, by contrast, generally provide little warning and usually have a narrow scope of impact, although the damage potential in that impact zone is great. The optimum conditions for role conflict, however, are created by earthquakes. These agents generally occur without forewarning and are widespread. Therefore, they create the conditions in which the greatest degree of role conflict might be found.

We selected six different disaster events to examine in more detail. These cases involved four different types of disaster agents—tornado, flood, hurricane, and earthquake. The six research sites were Anchorage in the Alaskan earthquake, 1964; New Orleans in Hurricane Betsy, 1965; a tornado in Topeka, Kansas, 1966; an extensive flood in Fairbanks, Alaska, 1977; a tornado in Lubbock, Texas, 1970; and a tornado in Xenia, Ohio, 1974. Three tornadoes were chosen since these were the primary disaster agents upon which the Killian articles were based.

At each of these research sites, we interviewed key persons—usually both the head of the organizations and the person who filled the major operational role during the emergency—in a variety of relevant organizations: local police departments, fire departments, hospitals, civil defense offices, municipal public works departments, offices of the mayor and city manager, various utilities, mass media, Red Cross, Salvation Army, military units, National Guard units, sheriff's departments, and others.

In addition, in several of the communities we interviewed specific types of organizations more extensively. For example, in certain smaller organizations, every organizational member was interviewed. This was the case in the State Office of Civil Defense in Anchorage and the local Red Cross chapter in New Orleans. In larger organizations, we interviewed persons in all of the top organizational positions and sampled those working at lower levels. For example, in Anchorage we interviewed all of the 25 supervisory personnel who had the position of foreman or above in the Department of Public Works. This department included six divisions—airports, building inspection, traffic, engineering, maintenance, and water. We also interviewed a 20 percent sample of lower level positions. In Topeka, we interviewed all personnel with the rank of captain and above within the police department. In addition, in the service division, all desk sergeants and dispatching personnel were interviewed. Among the divisions most involved in disaster activity on duty at the time of impact was the patrol division. We interviewed two of three lieutenants, four of five sergeants, and 23 patrol officers. In the traffic division, the two lieutenants, 3 of 4 sergeants, and 15 patrol officers were interviewed. In all, 79 interviews were obtained in a department of 142.

In each community, the interviewing pattern was similar. After establishing the person's occupation and organizational role, the individual was asked to indicate his or her physical location at the exact time the disaster occurred, and then asked to detail personal behavior during the emergency period. The length of the interviews, which included additional information about the behavior of the person in the organizational role, whatever it was, varied from 1 to 8 hours, averaging about 1½ hours. After being transcribed, the interviews were read for the specific purpose of noting any verbal expression or any behavioral indication of role conflict.

There is little likelihood that persons who were interviewed would systematically avoid describing any family search behavior that involved abandoning their occupational roles. A number of cross checks mitigated against this. In some of the organizations, the authors or other staff members of the Disaster Research Center were able to observe organizational behavior during much of the emergency period. And while we were generally not there at the time of impact, we picked up much common knowledge about impact behavior during the emergency period. In almost all of the organizations, we had multiple interviews that provided further cross checks. Since the focus of the interview was on organizational role behavior, operational problems, particularly those created by role abandonment, would be tapped. Since we interviewed all relevant emergency organizations about various interorganizational problems during the emergency, we had the added observations of outside personnel about their problems with other organizations, including problems that would ensue from role abandonment of key personnel.

Consequently, we read 413 different interviews of personnel in relevant emergency organizations. The interviews were detailed descriptions of their behavior during the emergency period. We did not ask them whether they had experienced role conflict since we were concerned only with the ways in which they behaved in an emergency. We classified them as to where they were when they became aware of the emergency—at work, at home, or neither (see table 1).

The results show that among those persons at work (N=183), none

Table 1. Role behavior of personnel in emergency organizations, by location at time of impact and by disaster agent

Location at time of event	N	Disaster agent	Stayed on job	Search behavior on job	Temporarily left job	Abandoned role
At work	21	Earthquake	16	0	5	0
	58	Tornado	56	2	0	0
	104	Flood–hurricane	83	14	7	0
			Active response (to work or reacted to definite need)		Passive response	
					Waited on notification	Delayed reporting
At home	53	Earthquake	37		16	0
	72	Tornado	62		2	8
	40	Flood–hurricane	13		13	14
			Active response		Passive response	
			To work	To family, then work	Home and waited	Delayed reporting
Neither at home nor at work	17	Earthquake	12	4	1	0
	29	Tornado	19	4	3	3
	19	Flood–hurricane	9	5	2	3

abandoned his/her emergency role responsibilities. About 15 percent engaged at some time in search behavior, mostly in connection with their job responsibilities. For example, a radio dispatcher might have asked patrol officers to drive by and see if everything was all right at his house the next time they were in a certain area. A few workers temporarily left their jobs to engage in some informational search. For example, one school official commented that before he started a damage assessment of school property, he walked outside to a point where he could see his own house, and seeing it still standing he proceeded on his assessment.

For those who were home (N=165), 62 percent were involved in what we called an active response, meaning that they quickly entered the emergency social system, either in their work role or in terms of some reaction to an emergency-created need. The rest were involved in what we called a passive response in that they did not take any immediate action to assume their organizational responsibilities. Such a stance, however, is not necessarily inappropriate. Most worked for organizations that followed a pattern of notifying them if they were needed for work.

For those who were neither at work nor at home (N=65), 82 percent were involved in an active response. Some went directly to work, while others went home before they reported to work or stayed home to await notification.

In sum, in examining a sample of 413 persons who held positions in emergency-relevant organizations, not one abandoned his/her emergency role obligations to opt for familial role obligations. For those who were at home or away from home or at the work site at the onset of the emergency, the most common response was to report to work or to react in some fashion to needs created by the emergency. Of those persons who were not at work at the time of the emergency, some 28, or less than 1 percent of the sample, indicated some delay in reporting to work.

Finally, it should be noted that in the instance of the subsample of the earthquake, the most efficient test of the role conflict hypothesis, there was no abandonment of occupational role responsibilities nor any delay in reporting, regardless of location. Consequently, in these observations not a glimmer of support exists for the usual predictions about the consequences of role conflict in emergency situations. The empirical cupboard is so bare that there are no anecdotes to support the conventional wisdom.

Discussion

It is difficult to discuss a concept that has no empirical support. One might focus on why some social scientists feel that it is a viable concept in the absence of such support. Thus, the problem is embedded in the belief structure of social scientists, rather than in the behavior of people in emergencies. The lack of empirical support should suggest that much of the formulation of "role conflict" is inadequate. It might be useful to point to some of the sources of inadequacy in that formulation.

1. Perhaps the greatest problem is the lack of relationship between a person verbalizing contradictory demands and his/her actual behavior in emergencies. The relationship between verbal statements and subsequent behavior is an old and complicated issue and will not be reviewed here. It is sufficient to suggest that paper and pencil tests asking oppositional questions, such as "would you go to work or save your child" may evoke conventional answers, but never knowledge.

2. The very formulation of role conflict poses an oppositional form that distorts social reality. Since people always play many roles, life, even in emergencies, is never an either/or matter. The opposition implied in the construct is analytical and thus located in the investigator's mind rather than in actual behavior. It is perhaps better to drop completely the notion of conflict and to use the vocabulary of "role strain" (Goode 1960).

3. Part of the problem comes from the reification of occupation and emergency-relevant roles. Many occupational roles become irrelevant in emergencies. In fact, many of the illustrations Killian used were drawn from situations where persons had roles in which they were unsure of how they should behave. Since they were unsure, they went home. Such usual action does not necessarily illustrate the resolution of searing choices among alternatives.

   The status of emergency planning in the early 1950s was, at best, embryonic. Since that time, role responsibilities for emergencies have been much less ambiguous within American communities. That greater certainty now allows for families to engage in planning for various contingencies. Such planning has always been characteristic of the more traditional emergency organizations, such as police, fire, utilities, and health care organizations.

4. Part of the problem comes from the reification of the family. Most of the anecdotal evidence of role conflict is usually stated in terms of a classic stereotype of the family. That stereotype involves an employed and competent male whose place of employment is separated from the location of his unemployed wife, who is there with her small and anxious children. The location of that family unit is in danger and lacks alternative sources of support, such as kin and neighbors. It is also assumed that no information is available about

the family while the husband is on the job that has emergency responsibility. Given that scenario, the usual prediction is that the husband will leave the job to take care of family members, or he will somehow delay his job responsibilities until he is assured of their safety.

That stereotype is filled with implausible assumptions and is atypical within American society. In the 1980 census, about 13 percent of American families had an employed male, unemployed female, and small children at home. There is no reason to suspect that all those family units are composed of macho males and incompetent females.

5. Part of the problem lies in the assumption about overwhelming manpower needs in emergencies—that because communities have an increase in problems, they require an increase in manpower. That is incorrect. During emergencies, many standard roles are irrelevant, so that the existing personnel can be utilized in roles actually needed. In addition, American communities are very inefficient in allocating human resources in nonemergency situations, so that such traditionally underutilized personnel as the aged, teenagers, and housewives can be utilized when needed.

6. Part of the problem lies in the assumption of the dramatic quality of the emergency period. An emergency is usually portrayed as being substantively different from normal times. However, changes are not necessarily dramatic. There is always a period of time when an assessment is made as to what the nature of the disaster problem will be. In that period, the understanding of tasks is gradually achieved. In that period, too, people know they will be involved at some future time, and they can make family arrangements for that involvement. Also, not all organizational activities are simultaneous during a disaster event. The public works department might be at its peak activity long after medical personnel have completed their tasks.

   In addition, everything that goes on in normal times in work organizations cannot be classified as work, and these activities continue in emergencies. Personnel in emergency organizations still have to eat, go to the bathroom, rest, sleep, etc. Although people might spend less time fulfilling these needs during an emergency, there is nothing to prevent workers from contacting family members when it does not contradict the immediate tasks.

   Some observers assume that disasters and other types of emergencies constitute dramatic break points in social life, so that behavior is qualitatively different. Such a view is incorrect. An incompetent employee prior to an emergency is not likely to become competent in an emergency. A competent employee is not likely to become incompetent. The best prediction of emergency behavior is to base it on its similarity to preimpact behavior. Continuity of behavior is the best assumption, rather than dramatic change and discontinuity.

7. Part of the problem comes from designers of the "big" scenario. Such scholars are very inventive in the creation of large hypothetical problems that might/will occur in the future. Their tactic suggests that any evidence about lack of role conflict from past emergencies is irrelevant since it will surely occur some time in the future.

   It is sufficient to note, however, that only once in the over 200-year history of the United States have we had an emergency that involved 5,000 deaths (Galveston in 1900). When the big scenario comes, it will be an event new in human history for all those living at the time, so it would be more prudent to base prediction of our behavior on past experiences rather than on our future imaginations.

The reasons for the lack of evidence to support the role conflict hypothesis are not totally explained by errors in conceptualization. Much of the lack of evidence is due to structural changes that occur in emergencies. These changes simplify role relationships and inhibit the development of role conflict. It is to those issues which we now turn.

Structural Factors That Lead to Role Simplification in Emergencies

The discussion of role conflict usually focuses on personality and postulates intrapsychic and interpersonal causes. The social system is seen only as producing conflicting demands, which are internalized. Since this approach produces no evidence, the problem should be examined instead from the vantage point of the social system. The system problem in emergencies is one of integrating role systems, so that the role performance of the actors fulfills the necessary institutional requirements. If one starts from that vantage point, the lack of evidence for role conflict is understandable since, in emergencies, role systems within communities are better integrated and, paradoxically, problems of role strain are reduced rather than enhanced.

Instead of assuming that role strain is emergent in crisis situations, it is more appropriate to start with the assumption that the malintegration of role systems is universal and that role strain is a normal state for all actors. In other words, individuals commonly face a wide, distracting, and sometimes conflicting set of role obligations. Since this is a normal state of affairs, certain institutionalized mechanisms exist to reduce the strain, e.g., compartmentalization, delegation, and elimination of role relationships. However, the ability of the actor to minimize role strain is both limited and determined by certain structural factors.

The initial concern about role conflict in crisis situations completely ignored the possibility of certain structural changes within roles, as well as changed forms of integration within disaster-affected communities.

It is suggested here that the aggregate scope and intensity of role strain is actually less in disaster than during normal times. This facilitates the fulfillment of role obligations during the emergency period. In fact, some of the changes that occur in emergencies provide conditions for the positive reinforcement of relevant emergency roles. These factors are discussed below in terms of (a) the community role structure and (b) the role structure of emergency-relevant organizations. Subsequently, we will discuss the family, which continues to assume a major focus for role allocation and continues to provide some of the mechanisms that mitigate role strain.

Community Role Structure

In various ways, sociologists usually contend that role obligations ultimately are based on values. Therefore, in observing types of behavior, explanation for repetitive role performances is usually provided by positing degrees of consensus on desired ends. In explaining the aggregate role structure of a community, the common view is to posit a multiplicity of values and to suggest that in the normal state, a community can be viewed as a collective attempt to achieve many different values. In this normal state, time, energy, and other resources are normally available to achieve multiple values, even when many of these values are potentially contradictory. Activities of most community inhabitants are compartmentalized or sequenced, and the activities of most community organizations are oriented toward one or another value without much direct competition. In other words, both at the individual and institutional levels, a somewhat free market state exists that allows the achievement of multiple, but often conflicting, values.

A disaster event changes this rather dramatically. No longer can the community assume that resources will be plentiful so that all existing values within the community can be achieved. Choices have to be made. Certain values become more critical than others in the survival of the community and, therefore, become more important in the allocation of resources. This means that certain norms and, consequently, certain roles become important, while other norms and roles become less important.

During the early stages of the emergency period, communities go through a reshuffling of value priorities, which has been conceptualized as the development of an emergency consensus (Dynes 1970). In fact, the results produce a state of consensus that is perhaps the closest empirical realization of normative consensus possible in modern societies. In Durkheimian terms, organic solidarity shifts to mechanical solidarity (see Turner 1967 for a related discussion). This emergency consensus has as its highest priority the care for disaster victims—provision of both medical care and basic necessities. Somewhat lower in the priority system are those tasks that are directly relevant to achievement of core values, e.g., restoration and maintenance of essential community services and maintenance of public order. The shift in values also means that any of the traditional locality-relevant functions of the community are no longer important (Wenger and Parr 1969). For example, roles related to the production/distribution and consumption of goods are drastically altered. Roles related to socialization functions within the community or to various avenues of social participation now become only minimally important. As the emergency consensus makes certain roles more critical, it also makes many other role obligations completely irrelevant.

From a systemic viewpoint, the community eliminates nonrelevant roles by specifying minimum performance levels at the same time that other roles become critical and performance levels enhanced. The net result from the viewpoint of the individual is to reduce the scope of his total role obligation, as well as to eliminate many elements of the remaining role sets. The net result is to minimize the possibilities for role strain and to achieve more adequate performance in the critical roles that remain. The total role structure of the community has become rather coherently organized around a set of value priorities. At the same time, irrelevant roles that could produce strain are eliminated until the emergency is over.

Values that are central to the emergency consensus are those traditionally called primary values. In other words, they are values that give high priority to caring for people, helping persons in distress, providing for their basic physical and emotional needs, and sharing with others. These were the dimensions that the Killian article tended to put in opposition to other types of demands on the person. While there may be some conflict with the preimpact structure, they are very consistent with the demands of the emergency period. The implementation of these values can be achieved in several different forms. Some organizations within the community have as a part of their organizational domain responsibility for implementing some of these values. Therefore, occupational role expectations within these organizations are still relevant since they are consistent with the existing value structure. On the other hand, these values can also be achieved through a variety of more informal actions on the part of community members whose customary occupational roles are irrelevant in the emergency period.

Role Structure of Emergency-Relevant Organizations

From the viewpoint of the community system, a relatively small number of roles are essential for the immediate tasks created by disaster impact. In the early stages, knowledge is lacking about the scope of the impact and the tasks it has created. The more obvious problems and, therefore, the most known problems are those that involve search and rescue of victims, provision of medical care, and protection against continuing threat. These tasks pass on to various community organizations where there is a high probability that persons will be occupying the positions and performing the roles with competence. Such organizations—police departments, fire departments, hospitals, ambulance services, segments of the public works departments—have been designed with emergency tasks as part of their organizational domain. Such organizations build into their roles certain expectations about emergency behavior. These expectations are less concerned with explicit prescriptions of behavior than with implicit understandings of general obligations. These involve the expectation to stay on the job if on duty when the emergency occurs, or to report to duty when informed of the emergency. These expectations may be generally understood and/or they may be institutionalized into organizational notification schemes—fan-out phone systems and the like.

The emergency relevant organizations generally operate around the clock. This means that, with multiple shifts, they often have between two and three times the personnel necessary to maintain normal operations at any one time. The existence of such personnel allows for the possibility of expansion of organizational activities to compensate for overloads and/or allows for an excess to compensate for any potential loss of personnel from injury (or from role conflict).

Because organizational members are assured that those members on duty will remain there, off-duty personnel at the time of the emergency feel that they have time to check personal and familial damage and engage in certain types of nonoccupational role behavior prior to reporting. In fact, in many communities where work relationships spill over into friendship relationships and into neighborhood clusters, persons often have some knowledge of the family obligations of fellow emloyees. Consequently, these employees may stop on their way to reporting for work to informally check on family members of those on duty.

In the immediate postimpact period, research indicates that individuals go through a rather momentary cognitive reorientation process. This involves a consideration of what has happened and the consequences, and what behavior is required at that point. Many of the preimpact roles of the community members within the impact area are irrelevant at this point, freeing individuals to perform familial roles or to perform more informal altruistic neighboring, helping roles. For example, most of what is known as search and rescue operations are conducted by unattached persons in the impact area. Their initial action is later supplemented by emergent organized types of activity (Quarantelli 1970). Outsiders often view much of this type of activity as being disorganized. It is disorganized, to the extent that this effort is a byproduct of uncoordinated but similar actions on the part of diverse actors—individuals and small informal groups. Practically all of these individuals have no other specific role responsibilities in the emrgency. If they do, their initial action is considered by themselves and by others to be within the scope of occupational involvement, e.g., a police officer or firefighter who becomes involved in search and rescue activity. Search behavior for family members then is a legitimate role expectation for those without explicit emergency role obligations, since it is consistent with the core values that have become critical.

Family Role

It seems strange that a whole set of assumptions has developed that implies that family obligations somehow undercut emergency activity, or that performing emergency activity is antithetical to family values. In contrast, the research over the last 20 years continues to support Quarantelli's earlier summary of the enhancement of the extended family in emergencies. In fact, the most appropriate way to view the functioning of the family is in terms of its important supportive, rather than conflictual, role in emergencies.

In the development of an emergency consensus, it was suggested that the values expressed are primary values, very consistent with the expressive functions of the family. There are no reasons to suggest that family norms do not facilitate effective occupational performance in emergency situations. In fact, a major element in the role definition of father and husband rests on successful occupational performance. In addition, the values of family participation in the community can certainly be realized through emergency activities. It is very common to observe, in emergency organizations, segments being run by family units (husbands, wives, children) even though only one family member may be officially employed.

In fact, it is most accurate to see the family unit as a "role budget" center in which various types of necessary role allocations can be made, and where support can be provided for those allocative decisions. For example, if it is determined that "mother" needs to work a double shift at the hospital, other family members can be allocated food preparation or child care responsibilities. Thus, other family members, either from the nuclear or extended family, can pick up the obligations that might go unmet during the emergency period. Such decisions free the family member to participate fully and without conflict in the occupational expectations created by the emergency.

Of course, not all such supplementation comes from family groups; it also comes from neighbors and other more impersonal help sources. But the family provides a natural decisionmaking unit that can make such allocations easily—without conflict or strain—since it recognizes that the occupational demands are necessary as well consonant with primary values. While there may be high demands of time and energy made on family members, such requests are perceived not as conflictual but only as understandable. Instead of experiencing role conflict, family members feel good about their ability to participate, sometimes directly through roles in emergency organizations and sometimes indirectly through providing familial support for other family members who are involved in such roles. In sum, while role conflict seems to be a problem for many professionals contemplating emergencies, it is seldom a problem for those solving emergencies.

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A Response

Diane Garaventa Myers, R.N., M.S.N.

Dr. Dynes's systematic research on disaster indicates that role conflict does not seem to interfere with an individual's ability to perform duties in times of emergency. His explanation for this phenomenon is based on an examination of the social system in times of disaster, in which certain changes occur within a disaster-affected community that lead to consensus regarding value priorities and emergency needs and activities. Thus, the scope of role obligations for emergency workers is reduced; specific, relevant behaviors are positively reinforced; and possibilities for role conflict and strain are minimized.

Dr. Dynes's findings are consistent with my own experience and observations regarding emergency worker behavior in disaster. At the same time, however, I strongly identified with Killian's descriptions of conflicting demands and dilemmas of loyalty (1952). As a disaster worker and director of two postdisaster mental health counseling projects, my experience has provided me with dozens of anecdotes of conflicts felt within myself and within disaster workers I have talked with following emergency operations. Thus, I feel torn between two apparently conflicting realities--how emergency workers perform during an emergency versus how they feel about their actions during or after the situation.

From my perspective, both realities occur. Emergency workers do, in fact, perform their duties without apparent negative consequences of role conflict upon their performance. As one fire chief said to me, "You simply set priorities and do what needs to be done. Everything else has to wait" (Myers 1984). At the same time, workers do report feeling torn between loyalties and demands of job, family, and community. Such internal conflicts can lead to feelings of guilt, inadequacy, failure, or responsibility for losses that have occurred.

At this point, let me say a few words about some of the values of the emergency service professions. These are not, for the most part, groups of workers for whom feelings are comfortably shared or lightly discussed, especially feelings that might reflect doubts about one's performance. Such feelings are not comfortable for personnel with such high professional standards, high self-expectations as helpers and rescuers and, in general, a rather macho ethic. This reluctance to dwell in the arena of feelings may well have evolved from the professional necessity to deny and suppress feelings during emergency operations in order to function under highly stressful circumstances. It is often only after an emergency operation, when the "heroic" phase of action is past, that thoughts and feelings emerge that may be stressful for workers.

This was the case for one Louisiana fire chief after working at the scene of the Kenner, Louisiana, plane crash in 1982. There were no survivors to be rescued, and the recovery operation consisted of collecting mutilated body parts. Four days after the crash, Chief D.J. Mumphrey was at home, shaving, when he suddenly burst into tears. It happened again later, at work. "I am sitting in my office crying and I don't know what I'm crying about," he said. "Let me tell you something. I didn't handle it. Others didn't handle it" ("Crash" 1982).

Often feelings of conflict will surface for discussion in debriefings. A debriefing is a structured, organized approach to the management of stress responses after a particularly distressing event (Mitchell 1983). It is a positive, supportive meeting, usually led by a trained mental health facilitator, to assist personnel in talking about their feelings. Often, to help draw out workers' feelings, very specific questions need to be asked, such as "What did you think or how did you feel when that happened?" or "What was the hardest thing about the operation for you?" Given the hesitance and reluctance of some emergency workers to discuss the emotional aspects of their work, it is not surprising that research designed to study workers' *behavior* in disaster does not elicit much, if any, information about workers' *feelings* of conflict and stress. It is from the relatively recent collaboration of mental health and emergency services that much of our information about role conflict and stress is now being gathered. This is an area where further research could greatly assist us in providing valid data about the psychological and emotional concomitants of role conflict in the emergency services, and help us to identify effective mental health approaches to ameliorating the stresses involved.

As a mental health practitioner, I am concerned about role conflict for emergency workers because, as a stressor, it can contribute to a variety of postdisaster stress symptoms. These symptoms, ranging from mild to severe, can take a toll on a worker's health, family life, and job performance. Such stress can contribute to the burnout and high turnover rate in these professions. I believe we cannot afford to take a short-sighted view that says that as long as emergency personnel are performing their roles adequately, there is no problem. I believe that role conflict *does* exist as a stressor for emergency workers and is a legitimate area of concern for mental health and emergency services professionals.

In the remainder of this paper, I will outline some of the factors that I believe may affect the degree of role conflict felt by personnel during or after an emergency operation. These factors are related to the individual, the organization, the disaster, and the community. I will then suggest very briefly some interventions that may be helpful in reducing these feelings of conflict for workers.

Factors Related to the Individual

First, I believe that an individual worker's *prior experience* and coping skills are a fairly accurate predictor of behavior in an emergency. As Dr. Dynes pointed out, "continuity of behavior is the best assumption." Thus, if a worker was relatively comfortable juggling multiple roles under ordinary work conditions, chances are good that he will not have problems setting role priorities during an emergency. Next is the concept of *identity* and *expectations of self*. If a worker is ordinarily a high achiever, he may function exceedingly well during an emergency, but may experience a feeling of inadequacy or failure because of his inability to do everything that he recognized needed to be done. Hartsough describes such conflicts as stemming from "perceptual burdens" (1984), expectations that "I should have been able to. . ." Inadvertently, I believe our training of emergency workers can sometimes contribute to these self-expectations. In training emergency medical personnel, for example, we sensitize them to the emotional/psychological needs of victims (Mitchell and Resnik 1981) and encourage them to be warm, empathic, and compassionate human beings (Lamontagne 1983). This sensitization undoubtedly contributes to some inner turmoil when these workers must suppress their feelings in order to make difficult triage decisions or "scoop and run" with victims of mass casualties such as the Hyatt Regency disaster (Hartsough 1984).

The nature and severity of *losses* sustained by the individual worker may also be a predictor of stress related to role conflict. In some emergencies, workers receive information that their own homes have been damaged or are seriously threatened. In the 1982–83 California winter storms, several fire department personnel reported feelings of real conflict between job and home when they received information that their houses were flooded or threatened by mudslides. While these personnel did remain on duty and did whatever they could to arrange for family members' well-being, their feelings of conflict required some working through in the debriefings that followed the disaster.

I believe the type and extent of role demands outside the boundaries of the emergency organization may also contribute to worker stress. Schein (1965) discusses the importance of *interpersonal factors* as contributors to role conflict. Such factors as the nature of the relationship between "role sender" and the focal person, the degree of trust, and the degree of need and dependency are important in predicting the influence of any particular member of a person's "role set." Thus, children, family members needing care, persons with disabilities or health problems, etc., might become a tremendous source of conflict for workers. For example, in a family where both spouses are employed outside the home, the news that your child's school has sent children home during an emergency may cause extreme anxiety, especially if your family has not discussed such a possibility as part of a personal emergency plan.

Interpersonal factors lead us to *family relationships*. I would suggest that a good predictor of family reactions to the worker's increased job responsibilities would be based on predisaster relationships; that is, a worker whose family was supportive of his job responsibilities predisaster might reasonably expect similar support under disaster conditions. On the other hand, a worker experiencing family conflict and stress might expect those conflicts to worsen under the added stresses of the disaster.

I would like to comment briefly on the concept of the family unit as a "role budget" center, in which necessary roles can be allocated and support given for those allocations. I agree with Dr. Dynes's premise that family norms are consistent with the primary values of an emergency consensus, and that family units will usually recognize that increased occupational demands are necessary during an emergency. However, my experience with postdisaster family counseling strongly suggests that such role allocations are hardly made, as Dr. Dynes suggests, "without conflict or strain." Indeed, family needs may *increase* during the emergency. Household tasks may increase (such as cleaning up debris) or become complicated (preparing food without utilities or bathing without running water, for example). Children usually regress in their behavior, and parents may experience a decline in children's usually responsible and helpful behavior. Children who were toilet trained suddenly no longer are--and no running water or diapers in the house! Youngsters become "clingy" and fearful of separation from parents. All this occurs at a time when demands of adults' job and community responsibilities have increased. About the third or fourth day into a disaster, the initial energy, enthusiasm, and community spirit have worn off, and families of victims and workers alike report feelings of grief, anxiety, irritability, and anger. Workers frequently express concern about family relationship problems, and often need "permission," encouragement, or assistance in repairing relationships as well as repairing their damaged community.

Characteristics of the Disaster

Chamberlin (1980) and Hocking (1965) emphasize that the severity of stress supersedes the intrapsychic strengths of the individual as a determinant of the stress response (i.e., as the degree of stress increases, preexisting personality characteristics become less important). Thus, it is important to examine characteristics of disaster as contributors to role-related stress for individuals.

Dr. Dynes discusses the *scope* of impact, indicating that a wide scope will likely create situations that involve both work and family, thereby creating an optimum condition for role conflict. However, disasters of more limited scope can also create situations of role conflict. In a disaster that is site-specific, the likelihood is great that the affected area does not cover the entire jurisdiction of any given responding agency. In this situation, the organization is torn between the priority needs of the affected area and the ongoing, business-as-usual demands in the rest of the jurisdiction. For example, human service organizations may simultaneously be responsible for feeding and sheltering homeless people, while providing ongoing services to a caseload of public health, mental health, or social service clients. A fire department may be involved in emergency operations at a localized command center, while still having responsibility for ongoing duties in the rest of the jurisdiction.

Managers may deal with such conflicts by dividing their personnel between operations and/or requesting mutual aid. In any case, such site-specific emergencies may not generate the same type of emergency consensus and role simplification as do disasters of more widespread scope. For emergency workers involved at the site, priorities are clear. Supervisors from outside the immediate area, however, may tend to see ongoing organizational priorities as pressing, and thus urge emergency workers to hurry and "wrap things up." This can put tremendous pressure on emergency workers, who are now responding to needs within the disaster-struck locale as well as pressure to return to business as usual.

For a team whose staff has been divided between those doing disaster response and those taking care of ongoing organizational business, conflict can also arise. Those at the scene may feel guilty about those coworkers at the office or the station with double loads of responsibility, while those left "minding the store" may feel left out of "the action" or "the glory." Fences often need to be mended between these groups when the staff is reunited after the disaster, and individuals may need help dealing with their internal conflicts about the role they played during the disaster.

The *location* of the disaster may also have implications for role simplification and role conflict. For workers sent to disasters away from their home communities (Red Cross or Federal Emergency Management Agency workers, for example), conflict may arise for both the workers and those left behind, such as family members. While the family may understand the organizational priority for the worker to be gone, the family does not benefit from the consensus of priorities that occurs in the community of the disaster. Family needs and feelings can become problematic if not anticipated and dealt with.

The *duration* of the disaster may also influence the amount of role conflict felt by workers. Dr. Dynes discussed the importance of a warning period in allowing an individual to anticipate and avoid some of the potential consequences of role conflict. During the "heroic" phases of inventory and rescue, victims and workers alike generally respond with adaptive, action-oriented behavior, aimed at priority activities of search, rescue, and medical aid. There is usually a high level of energy and a surge of community spirit. Moving into the "honeymoon" phase, optimism about the community's ability to recover is high. There is still a strong consensus about priorities and a low level of conflict regarding what is needed. As people move into the "disillusionment" phase, however, the clear consensus of the earlier phases begins to give way. The emotional numbness of the first days wears off, and individuals begin to experience all of their feelings about the disaster, including anger and frustration. This anger is often focused at emergency service and disaster relief organizations for their perceived inability to provide remedy quickly and without red tape. Workers may feel hurt or betrayed by victims' anger, and later express guilt at having felt angry at victims in return.

As the emergency consensus diminishes postdisaster, a diversity of private interests reappear (Dynes 1978). Community conflict about allocation of blame or of resources may emerge during the rehabilitative phase postemergency. Workers may experience demands from victims and community members (many of whom they are identified with after working so closely with them during the rescue phase), while at the same time needing to operate within their organizational framework. Collaboration between agencies may diminish as they return to preemergency operating procedures, and workers may feel conflict between wanting to continue the emergency collaborative relationships and needing to return to their ongoing work relationships.

This return to predisaster roles, responsibilities, and relationships may lead to what has been called the "letdown" phase for emergency workers, in which workers may feel conflict about giving up the disaster role to return to business as usual. Such letdown is, I believe, directly related to losses experienced by workers in moving out of their disaster activities: loss of the excitement, meaningful activity, feelings of initiative and creativity, ability to use leadership and other skills, strong community spirit and team relationships, and the like. Returning to the old, predictable routine, with work piled up and the office a mess, can, indeed, be a letdown.

Organizational Factors

The *nature of the organization* may also influence the amount of role conflict experienced by workers. Some organizations, such as police, fire departments, and the Red Cross, have been designed with emergency tasks as part of their ongoing organizational domain. They have certain expectations about emergency behavior built into their roles, and have skill and experience in setting priorities and screening nonessential activities. Other groups, such as human service organizations, have emergency responsibilities that are required of them only in times of disaster. These responsibilities may be articulated only in a paper plan that has not been clearly communicated to staff, resulting in anxiety and role confusion during a disaster. I believe this lack of planning (or lack of familiarity with existing plans) is the norm for many such organizations, contrary to Dr. Dynes's statement that "role responsibilities for emergencies are much less ambiguous within American communities now than in the fifties." Thus, clarity of emergency roles, combined with training and drills to encourage comfort and competence in these roles, are important in preventing role conflict in times of emergency.

Even within emergency organizations, there may be some feelings of conflict for workers and managers in performing their disaster roles. Bard (1976) points out that in nonemergency times, 80–90 percent of police work is spent in helping roles (as opposed to those of enforcement). In times of disaster, police tasks usually entail those that symbolize authority, such as traffic and crowd control, protection of life and property, and warning and evacuation (Kennedy 1970). In a sheriff's department debriefing following one disaster, officers reported that the most difficult job for them emotionally was maintaining roadblocks, at which victims (many of whom the deputies knew personally) were presenting heart-rending, legitimate reasons for needing to get through. Despite their confidence that they were doing what was necessary in maintaining the roadblocks, these officers had real discomfort in being the "bad guys" in the eyes of the public with whom they generally enjoyed a very positive relationship.

For fire departments, a prevalent problem during natural disasters is that of maintaining their boundaries against the expectations or demands of community officials and other emergency organizations. Fire officials generally resist long-term involvement in nonfire-related disasters in order to keep their organizations intact and, hence, ready to meet those demands associated with their regular functioning (Warheit 1970).

Size of the organization and its personnel pool may also affect the amount of conflict felt by workers and managers. It is true that some tasks become irrelevant in times of emergency, thus freeing manpower for the priority activities. However, in many organizations, the workload increases dramatically. Not all organizations have 24-hour staffing pools on which to draw (human service organizations, for example). Volunteers may become available, but specialized professional skills may be difficult to delegate until volunteers can be trained. Thus, workers experience the conflict, despite consensus of priorities, of simply having more than they can humanly do. This also leads to tremendous feelings of conflict and guilt when workers need a break or time off from the operation.

Kahn (1964) mentions that the higher the *rank* of the person in the organization, the greater the possibility for role conflict and ambiguity, due to larger task systems (Schein 1965) and a larger force field of demands upon him.

Community Factors

Size of the community may influence the amount of conflict experienced by emergency workers. In a small community where workers know the victims, for example, workers' self-expectations about what they would like to be able to do may be increased. In addition, the personal relationships and lack of anonymity between workers and members of the public can lead to higher public expectations of workers (as with the deputies and the roadblock). Thus, the lack of anonymity may weight the demands of the community persons in the workers' role set, thus making it harder to simplify role expectations.

Previous degree of social solidarity among affected populaces may also be a factor (Fritz 1957). In the postemergency period, disaster-caused needs may further splinter groups where preexisting socioeconomic or other conflicts existed. Conflicts over allocation of blame or allocation of resources may increase political pressures on certain relief groups, for example, and cause conflict and stress for workers.

Prior disaster experience of the community will influence how quickly and comfortably communities move into a mode of emergency consensus and role simplification. It is highly likely that communities in disaster-prone areas who have "practiced" their disaster response are more likely to set priorities quickly, thus minimizing the duration of role conflict (Yutzy 1970).

Suggestions for Interventions

While the topic of this paper is not stress prevention or management, I have a few brief suggestions for emergency organizations which may help to reduce the stressful effects of role conflict as it may be felt by their workers.

First, emergency roles and responsibility must be made clear to workers in more than the form of a written plan. Appropriate training and drills are essential in helping workers to understand and function in their roles. Preparation should include discussion and practice of priority-setting under simulated, stressful situations.

From a mental health perspective, it can be helpful to discuss ahead of time the feelings of conflict that are likely to occur in situations of overwhelming demand. Such anticipatory guidance may be helpful to workers when they find themselves in situations where they cannot possibly meet all of the expectations and demands that are made upon them.

During an emergency operation, it can be helpful for staff to meet at the beginning and end of each shift, specifically reviewing workload demands and setting priorities in a team environment. Such group meetings can be helpful in making explicit some of the felt demands that workers are experiencing, and can provide peer support on a concrete, problem-solving level as well as on an emotional level.

Finally, debriefing of all staff following an emergency operation is essential. This preventive intervention can help to elicit from workers any unfinished feelings of "I should have been able to" or "if only" that may be related to the conflicting demands workers experienced. It can provide reality testing and peer support that can do much to mitigate the stressful effect of such conflict.

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2. Emergency Organization Role

Don M. Hartsough, Ph.D.

The emergency organization plays a critical role in shaping the behavior and attitudes of emergency workers in their jobs. Through job descriptions and other formal regulations, the organization creates the *social positions* that define the emergency worker role. The organization also helps form the *context* in which the emergency worker role is carried out, such as the setting of the organization's office or workroom, and the incident scene or other parts of the community where work is performed. Third, in formal and informal ways, the organization defines the *functions* or purposes of the emergency worker. Fourth, members of the emergency organization define the role of the emergency worker through their *expectations* as to how workers will carry out their work, how they will relate to each other, and so on. Importantly, expectations of older, more experienced workers are conveyed to the younger, less experienced ones. Finally, the organization has the power to *sanction* or *prohibit* behaviors related to role performance. It does this in formal ways, through rewards such as pay and promotion, and in informal ways, by communicating norms as to what is and is not acceptable behavior for the worker. To summarize, the frontline emergency worker is powerfully influenced by his or her employing organization through the formal positions defined, the context in which work is performed, the functions of the work, the expectations of others, and the sanctions related to the emergency worker role.

The present consideration of role conflict and support among emergency workers is an excellent opportunity to tackle a set of problems that are of great concern to emergency personnel. These include (a) the high attrition rate among emergency workers; (b) the unusual degree of burnout observed in some types of emergency work, especially those in which the worker must interact with the public under conditions of stress or trauma; and (c) the difficulty experienced by both the "old hands" and the novices in coming to terms with the traumatic situations that they must face as emergency workers. All these problems are interrelated, but this does not imply that attrition and burnout are caused solely by inadequate management of traumatic experiences. A number of other factors that could cause attrition and burnout are unrelated to trauma. In this paper, concepts related to role, such as role conflict, are used to explore the problem of traumatic stress in emergency workers.

Inadequate Resolution of Trauma as a Role Conflict

Elsewhere this author has described in detail the types of situations that give rise to traumatic reactions in disaster workers (Hartsough 1984). These are similar to the critical incidents discussed by Mitchell (1983*a*, 1983*b*) as applied to emergency workers such as emergency medical technicians (EMTs) and fire/rescue personnel. The pattern of symptomatic reactions to these situations has been labeled *traumatic stress*. Traumatic stress has several sources. In emergency work, a common source is exposure to death and injury, especially if the incident involves gruesome or bizarre stimuli such as the grisly appearance of bodies or a horrifying means of death. Multiple deaths, or intense and long-lasting exposure to the death scene, are related factors. Other sources of traumatic stress are exhaustion or injury on the part of the worker, or life-threat to a fellow worker. Finally, threats to self are a source of traumatic stress, particularly if they occur in the context of the other factors just described. Threats to self may be physical, or they may be threats to self-esteem, as when a worker judges his or her own performance to fall short of standard, and a civilian's life is jeopardized or lost.

While traumatic stress is not an everyday occurrence in emergency work, it is widely recognized as "coming with the territory." Most workers can describe a colleague who is still carrying the scars of an encounter that may have happened years ago. Why is it that traumatic stress persists with this group of people? Why have emergency workers, as a professionally trained group, been unsuccessful in discovering the means of resolving traumatic stress? One answer lies in formulating the problem in terms of role conflict.

Biddle defines role conflict as "any condition of common or attributed polarized dissensus which poses (usually unspecified) problems for object persons" (Biddle 1979, p. 394). Emergency workers have a set of beliefs, attitudes, and behaviors that they attribute to the role of an emergency worker. One approach to the problem of inadequate resolution of traumatic stress considers that these beliefs, attitudes, and behaviors simply do not include the repertoire of behaviors necessary to manage traumatic stress successfully. However, the problem is deeper than this. The role of emergency worker, as perceived and played out by the majority of persons who occupy it, is antithetical to the behaviors necessary to cope successfully with traumatic stress. In these terms, the conflict is an intrarole conflict.

An alternative formulation is possible in terms of conflict between two roles. If we define role as consisting of "those behaviors that are characteristic of a set of persons and a context" (Biddle 1979, p. 58), then it is possible to think of a role which is people-reacting-to-and-trying-to-recover-from-trauma. It is uncertain what a less cumbersome, one-word label for this role might be. The term "victim" does not convey the active coping that is going on within and between people in this role. Alternatively, the term "mourner" connotes circumstances of bereavement. For convenience, the term "recovery role" will be used here for the person actively recovering from trauma. The thesis presented here is that the recovery role is in conflict with the role of emergency worker. To be more specific, the role of emergency worker is defined and carried out in such a way as to be maximally consistent with the worker's needs when actually performing in an emergency. However, when the context changes from emergency scene to the recovery-from-trauma scene, these same defining characteristics conflict with what is necessary to play out the recovery role.

Research on Recovery Role Behavior in Emergency Workers

Several studies have documented the existence of traumatic stress in disaster and emergency workers (Hartsough 1984). In some of the studies, it is possible to at least estimate the extent to which workers were willing to engage in psychological recovery role behaviors, such as communicating their reactions to family and friends or otherwise seeking help for their distress. Apparently, no published research focuses specifically on the question of emergency worker willingness to take on a recovery role vs. resistance to that role, following exposure to trauma.

Latane and Wheeler (1966) studied the reactions of military volunteers who performed either traffic control or body search duties following an air crash that killed 82 passengers and crew. They found that body search duties affected the attitudes and behavior of the men, while traffic control tasks had little effect. The authors were interested in the effect of predisposition toward emotionality on later communication behavior. Emotionality was determined by a paper and pencil test that appears to be quite sensitive to the emotion of anxiety. Nonemotional (or nonanxious) men who experienced the most severe duties showed a greater desire to talk about their experiences and to write home, as compared with highly emotional (highly anxious) men with the same duties. For example, the former group wrote an average of 2.5 letters home in the week following the crash; the latter, only .5.

At first, the results of the Latane and Wheeler study seem not to make sense--why would the more emotional men fail to communicate about their presumably upsetting experiences? However, these results are consistent with the following hypothetical formulation: (1) all volunteers experienced heightened anxiety as a result of body search activities; (2) nonemotional men were uncharacteristically aroused, sufficient to make them increase their communication with others; and (3) highly emotional or anxious men avoided communication in order to prevent rearousal of their anxiety, during the first week after the crash. These findings are consistent with other research showing that being made highly fearful or anxious may lead some people to prefer being alone and to communicate less than normal with others (Gerard and Rabbie 1961; Sarnoff and Zimbardo 1961). It is important to note that in none of the studies was the question of long-term consequences of communication vs. lack of communication explored.

It is instructive to look at the help-seeking behavior of emergency workers. Taylor and Frazer (1982) investigated the effects of a body recovery mission following a DC-10 crash on Mt. Erebus in Antarctica. Of the 180 workers studied immediately after the mission, 81 percent reported sleep disturbances, 76 percent reported changes in appetite, and 49 percent reported changes in their feelings, but only 40 percent reported changes in talking to others. By the time of followup 20 months later, these changes had reverted to the norm; in the interim, five of the workers had discussed their reactions with friends, three with physicians, two with psychiatrists, and three with social workers. These workers who sought help represented 13 percent of the sample of 100 responding at followup. Thus, only about 1 in 10 of the workers specifically mentioned seeking out others for help in understanding their experiences.

Two studies reported on help-seeking among the approximately 1,000 rescuers at the Hyatt Regency Hotel skywalk collapse in Kansas City. Miles et al. (1984) studied a sample of convenience of 54 rescue workers, of whom 72 percent were males and 61 percent were in a health-related field. The authors reported that 45 percent of the workers perceived that talking and sharing would be extremely helpful in dealing with their distressing thoughts and feelings. Yet, only about one-third of the rescuers reported seeking help from family, friends, or coworkers for their distress. Specifically, 39 percent sought out mental health counseling, either on an individual basis (28 percent) or in group debriefing sessions (24 percent).

Wilkinson (1983) interviewed 102 victims, observers, or rescuers from the Hyatt disaster. He found that 34 percent of his subjects sought either counseling or psychotherapy, 30 percent had attended group sessions and found them helpful, and one person felt them not to be helpful and sought therapy.

A conclusion may be drawn, however tentatively, from the investigation of these disasters. Emergency workers are affected by certain types of incidents, and after intense emergency situations, a majority show evidence of traumatic stress (Hartsough 1984). However, only between 10 and 40 percent willingly seek out opportunities to engage in recovery role behaviors such as indepth talking with others about their distressed feelings and thoughts. This conclusion is based on studies of disasters, but it is likely to apply to more routine emergency work as well. Research is now being conducted at Purdue University by Elizabeth King on the role of sensitization and repression as personality variables in the response of EMTs to critical incidents. A preliminary analysis of her data suggests that for critical incidents—those with high potential for emotional arousal—both sensitizers and repressers use emotion-focused coping. By way of contrast, no difference was found between routine runs and critical incidents in the use of problem-focused coping. To the extent that this finding is supported by subsequent research, it means that the need exists to help all emergency workers cope emotionally with critical emergency runs.

Individual Barriers to the Resolution of Traumatic Stress

As noted previously, some of the behaviors, beliefs, and attitudes associated with the emergency worker role facilitate emergency work but impede recovery from traumatic stress. Some of the behaviors may be learned in formal training programs, along with standard emergency routines. Most of them, though, are probably learned informally, perhaps unconsciously, during the socialization process, in the way other behaviors are acquired. What are some of these behavior characteristics?

First, there is the task-and-tool orientation of most emergency workers. Workers are prone to talk about runs in terms of situational problems and resources. For example, a person was trapped in a wrecked automobile, but the Hurst tool was missing and had to be brought in by another vehicle, and so on. In the recovery role, it is helpful to orient to personal feelings, to focus on emotional problems and resources. For example, it was frustrating and anxiety-producing to wait for the Hurst tool to arrive, as workers were terribly concerned about internal bleeding, and they felt angry because the delay was unnecessary.

Second, emergency workers maintain an image of self-control. It is important to them to suppress anxiety and fear during emergency operations in order to concentrate on the task at hand. To open themselves to personal feelings is to risk being distracted from doing the job properly. While this strategy is adaptive for carrying out the work role, it conflicts with the requirements of a recovery role. The psychological healing process demands a certain amount of relaxation of self-control over feelings, and recovery is facilitated if troublesome feelings are shared freely with others.

A third characteristic is the reluctance of emergency workers to inflict their stories of suffering and death, and their own pain and anguish, on others. Some have seen how upsetting these experiences are, even indirectly, to their spouses and loved ones, and have resolved never to "tell again." An EMT at the Kansas City Hyatt, for example, said:

> Seeing people dead and injured—it hurts, but at the same time you block out, you're there for one reason. The only thing I could do was stay away from it—not read about it, not watch it on TV--there was no such thing as a 'Hyatt.' I just wanted to be left alone. If I didn't think about it, then it never happened... I felt if I talked about it, then I would be extending the suffering and pain and agony to someone else.

It was a full year before this worker realized his mistake and began the healing process of opening himself to others. In the meantime, he had become depressed, his work performance had declined, and he had neglected his wife and young daughter.

A fourth characteristic of the worker role is found in the high expectations that emergency personnel have for their own success. Further, they tend to define success and failure in terms of the ultimate outcome of the incident or run. Was the person saved or not? Motivations for rescue and lifesaving seem to become more personal when children are involved, and the self-imposed standards may be even more exacting. High standards may be functional for optimal performance and are praiseworthy from the point of view of the ordinary citizen. They do, however, complicate the task of recovering from trauma. Workers will feel less guilty and incompetent if they appraise their performances realistically. A better standard for success would seem to be the unit's or individual's best possible effort under the circumstances.

To summarize, the following characteristics of the role of emergency worker may act as barriers to recovery from trauma: task-and-tool orientation, image of self-control, reluctance to disclose distress, and unrealistic expectations for success. It should be noted that other attitudes, beliefs, and behaviors associated with the emergency worker role are likely to actually help in the resolution of trauma, such as worker cohesiveness, commitment to the profession, and the desire for self- and organizational improvement.

Organizational Barriers to the Resolution of Traumatic Stress

Two organizational barriers to resolution of trauma will be discussed here. The first is that in most emergency organizations, no standard procedure exists for the psychological debriefing of personnel exposed to trauma. The lone exception may be the provision of mandatory sessions for police officers involved in a shooting incident. In most units, however, the presence or absence of normative expectations to engage in debriefing are left to chance or to individual choice. For example, firefighters may conduct what amounts to an informal psychological debriefing among themselves while putting away equipment after a run. Informal debriefing is better than no debriefing at all, but it will occur only as circumstances permit and when individual workers take the risk to disclose their thoughts and feelings to fellow workers.

The norm in many units is toward remaining silent. This author recalls one worker from a general hospital emergency room who described what happened after they had lost an adolescent male accident victim to shock trauma. While the initial injury had not been life threatening, there was a delay in getting him to the emergency room. In spite of heroic measures, such as opening his chest for direct heart massage, the young man died. The worker reported that the staff members were very upset by the unnecessary death, but they "just cleaned up the blood and went on to the next patient," without breaking the silence. It was the norm to withhold communication of personal reactions. However, the worker obsessed about the dead patient for many days afterwards.

A second barrier concerns the organization's relationship with the community's mental health resources. These resources are important for the resolution of traumatic stress because they can provide the personnel best suited to facilitate debriefing procedures and conduct followup with workers, as necessary. In some larger cities, emergency organizations have their own mental health units, or in some cases the chaplain serves as a counselor or as a liaison to mental health resources. Such inhouse personnel are a valuable resource for a program of psychological debriefing for emergency workers. A State or national program to provide or upgrade psychological debriefing for emergency workers might start with a training program for these inhouse personnel.

Most emergency organizations lack close ties with the mental health resources of their community. One reason is that each party belongs to a different community system—the emergency units belong to the emergency medical/fire and rescue/civil defense/security system, and the mental health services belong to the human services/mental health system. In most of their work, the two systems do not overlap. Even when they do work together, it is for the disposition of cases or clients in one system that more appropriately belong to the other.

Most emergency units, including emergency rooms, fire and rescue, and police, need to overcome this organizational barrier in order to provide high quality debriefing services to their workers. Establishing a tie with some mental health resources would reinforce the importance of psychological factors in emergency work and would greatly assist in sanctioning recovery behavior for workers.

The Critical Incident Stress Debriefing

Several debriefings of emergency workers following disasters have been noted (Hartsough 1984). Of these, the Critical Incident Stress Debriefing (CISD) developed by Mitchell (1983*a*, 1983*b*) is the only one to have a well-developed rationale and guidelines for application. CISD can be used in both routine emergency work and in disasters. Its objective is to initiate the recovery process following trauma, which is partially accomplished by reducing the barriers noted earlier. An organization employing CISD is implicitly sanctioning the recovery role by sponsoring the procedure, and explicitly teaching the recovery role through the techniques and methods of its facilitator. Thus, CISD could serve as a basic service unit in any program designed to lower the incidence of traumatic stress in emergency workers.

CISD is a group procedure for all emergency personnel involved in a critical incident. It is optimally held within the first week after the incident, and may take from 1 to 3 hours. Mitchell recommends that the facilitator be a qualified mental health professional (Mitchell 1983*a*, 1983*b*) who can assess people quickly, is skilled in group leadership, and can manage intense emotions. Experience in emergency work is also helpful.

Mitchell (1983*a*) divides CISD into the following general format:

- An *introductory phase* for introducing the facilitator, outlining confidentiality, and explaining the purpose of the session

- The *fact phase* for eliciting from members of the group what activities they performed at the incident, and what they heard, saw, smelled, and did as they worked at the scene

- The *feeling phase* wherein the facilitator encourages members to share with others the feelings that they had at the scene and that they are having now, and to indicate whether they have ever had these before

- The *symptom phase* where the facilitator focuses on the psychological and physical aftereffects that the workers have experienced following the incident

- A *teaching phase* where workers are reminded that the symptoms they have experienced are normal responses to extraordinary circumstances, and where the rationale for a stress-response syndrome may be explained

- A *reentry phase* to conclude the group's activities, answer questions, and allow the group to perform a plan of action if it wishes

One important guideline differentiates CISD from an incident critique session. CISD focuses on the psychological and emotional aspects of disaster and emergency work; it should not be used for critically reviewing emergency or routine procedures or finding fault with what occurred during the incident. The rationale for this guideline is that the tone of the meeting should be kept as positive and supportive as possible in order to encourage workers to accept their own distressing feelings and to support one another. In this way, there is an implicit permission to expose the human, vulnerable side of one's self without the danger that one may be criticized at the same time on actions taken at the scene. The incident critique is another procedure and should be held separately from CISD.

Debriefing offers many advantages for emergency and disaster organizations. It is a specific, focused intervention procedure for releasing stress during a time when it has reached the greatest intensity. Further, experience with the debriefing process can influence group norms toward giving emotional support for distressed workers and teach workers how to use specific skills for coping with stress. Finally, it is an opportunity for workers to request further professional assistance if they feel it would be helpful.

Research in Support of a CISD Program

Several lines of research are needed to test the need for and feasibility of instituting CISD procedures. They could be done independently or according to the following chronology.

First, the extent of the need for debriefing should be established. Questions such as the following should be researched: Can a consensus be reached on the definition of a critical incident? How many critical incidents occur annually in emergency work? How many and what types of emergency workers are affected? Are some types of emergency work more likely than others to result in traumatic stress? What are the short- and long-term consequences of involvement in a critical incident? How are these consequences affected by exposure to multiple incidents? How is the need for debriefing perceived by the administrators and senior officers of emergency organizations? As noted earlier, some work at Purdue is being conducted on worker symptoms and methods of coping with critical incidents, as opposed to reactions to routine runs.

A second line of research should be carried out on the feasibility of implementation. What are the existing linkages of the emergency and mental health systems? To what extent is it possible to find linking persons between the two systems, and what are the attitudes of these people toward debriefing? Where there are no internal mental health resources, would organizations be willing to establish ties with mental health personnel who might conduct debriefing? What are the attitudes of these outside mental health personnel toward working with emergency workers? Are there sufficient economic resources to support a program of CISD orientation and training in major emergency organizations?

Third, studies need to be conducted to evaluate the effectiveness of the critical incident stress debriefing. What is the relationship of debriefing to the resolution of traumatic stress? Is the procedure as effective following less critical incidents as it is after major disasters? What qualities of the facilitator are related to outcome? What are the optimal time parameters for conducting a successful debriefing? The procedure is new but is likely to be used on a trial basis by some emergency organizations in the near future and should be evaluated at that time.

Finally, some research might focus on the long-term consequences of an organization having a standard CISD program in place. For example, would CISD reduce the rate of attrition? Might it not be seen as a supportive procedure by frontline workers, and encourage them to willingly take part in critical incidents instead of avoiding them? Answers to these questions, of course, depend on the establishment of a program on a long-term basis and the willingness of the organization to be studied over time.

Conclusions

Traumatic stress is a serious problem among emergency workers. Recovery from traumatic stress is impeded by a role conflict that prevents emergency workers from engaging in behaviors that are necessary for healing. The emergency organization bears primary responsibility in reducing this role conflict, but will require the active cooperation and support of mental health resources on the local, State, and national levels.

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A Limited Response by a Practitioner

E. Erie Jones

A functioning and exercised organization is needed to assure the fulfillment of emergency response tasks and the efficient use of workers in a smooth response operation. I agree, for all the reasons offered by Dr. Hartsough, that such an "emergency organization plays a critical role in shaping the behavior and attitudes of emergency workers regarding their jobs." Relative to the topic of inadequate resolution of trauma as a role conflict, my reactions in this discussion are without the benefit of reading the cited work by Hartsough, Mitchell, Biddle, Latane and Wheeler, and others. Also, I do not want to engage in that popular game of academician vs. practitioner, or theoretician vs. "the real world." However, contrary to the treatise by Hartsough, I have not personally observed significant evidence of traumatic stress in emergency workers who have had exposure to experiences that might produce this stress. I have observed among them some stress effect from fatigue, personal actions "antithetical" to usual personality, and jocular behavior that was interpreted as an effort to deny the emotional trauma resulting from a difficult experience.

Dr. Hartsough suggests a desire for a "psychological debriefing of personnel exposed to trauma." To that end, I would propose a somewhat different approach, i.e., a straightforward debriefing by organizational leaders or supervisors for the purpose of reviewing actions to improve future responses. Conceivably, the concomitant of this process—a type of emotional catharsis—would be valuable to the individuals as the response team building is presumably enhanced.

I emphasize the use of organizational leaders or supervisors since much of the traumatic stress is experienced by volunteers in disasters in remote and rural areas, and therefore the CISD structure would not be available to them. Additionally, organizations of emergency workers still tend to reject mental health people, particularly those from the "outside."

Finally, with regard to needed research, I suggest efforts to bring the "theoretical" to "the field," to put trained mental health people with the responders and as responders.

I accept the need for adopting the concept of the CISD program. But, it should not be brought in as an external effort or as a "foreign" component to the emergency response.

3. Institutional and Political Contexts

Thomas E. Drabek, Ph.D.

Role conflict during crisis situations is an important topic within the larger research area of human adjustments to environmental settings. While the focus on narrow subtopics of this issue is essential, broader institutional and political contexts not only require independent investigation but also often recast the assumptions being made about problem definition and range of potential solutions. Indeed, as I reviewed relevant literature and itemized research needs, my conceptualization of the initial problem area was altered; it became clearer that crisis responses cannot be understood fully if viewed as occurring in a vacuum.

By examining initial assumptions, my analysis took on a more comprehensive quality. Thus, when the issue of role conflict was placed into its institutional and political context, many issues proposed by other participants became better integrated. My analysis is organized into three topics: (1) current research base, (2) research issues, and (3) program needs. From it, six general conclusions are derived.

Current Research Base

Last year I reviewed nearly 900 studies published in the academic literature that concerned human response to disaster (Drabek 1984; Drabek, in preparation). While some of these studies had been completed by geographers, economists, anthropologists, psychologists, political scientists, or those announcing some other disciplinary designation, most had been written by sociologists. My integrative manuscript provides an overview of the rapidly growing literature that has been published since the earlier summary statements provided by Fritz (1961), Baker and Chapman (1962), Barton (1969), and Dynes (1970). Because of its generalist quality—reflecting both content and procedure—it differs from and thereby complements the more focused review completed by Rogers and Nehnevajsa (1984).

While role conflicts among emergency workers during disaster responses have been noted, the issue did not surface as a major theme in the literature. Institutional and political contexts occurred, however, where researchers had linked such conflicts to various problems or outcomes in the emergency period.

Dating back over three decades, Killian (1952) proposed that helping behavior following a disaster might be curbed somewhat because of role conflict. In particular, family obligations might conflict with organizational responsibilities. Others discussed the presence--or potential—of such conflicts in brief comment. Examples include the following:

- Greater conflict exists for those who have injured family members than for those who do not (Form and Nosow 1958, p. 102).

- Women experience more conflict than men (Form and Nosow 1958, p. 103).

- The choice of most men is to be with their families rather than fulfill the tasks of their positions as members of another group (Mileti et al. 1975, p. 67).

Dynes's (1970, pp. 151–157) review of these early studies led him to question both the reported behaviors and their interpretations. If role conflict occurs, what range of behavior can be anticipated? Dynes stressed that the available evidence, weak though it was, indicated an absence of role abandonment. Further, he hypothesized that this behavioral outcome, one that does not preclude feelings or perceptions of conflict, may reflect the operation of both priority and avoidance mechanisms. Thus, the greater the degree of priority mechanisms in place (i.e., training, community visibility, and work group loyalty), the more role conflict will lessen and the organizational role will gain priority.

Dynes's hypotheses illustrated avoidance mechanisms as follows:

- The greater the proportion of organizational members recruited from outside the disaster area, the less role conflict will occur. Particularly in a limited disaster, conflict will not develop. Some organizations, such as State police and public utilities, can mobilize from outside the area.

- The greater the proportion of such organizational members without close family ties, the less conflict will occur. This applies to many military organizations and to the Catholic Church (Dynes 1970, p. 155).

Emphasizing this distinction between role conflict and role abandonment, Dynes and Quarantelli (1976) also concluded that although the former may be identified, the latter was rare. Drawing upon case materials gathered by field teams from The Ohio State University Disaster Research Center, they proposed three reasons for this (pp. 239–240).

> The total role structure, thus, becomes more coherently organized around a set of value priorities and, at the same time, irrelevant roles which could produce strain are eliminated until the emergency is over...
>
> ...Because of the assurance that these organizational members on duty will remain, other organizational members not on duty have the reassurance that they have time to check personal and familial damage and also to engage in limited amounts of nonoccupational role behavior before reporting.
>
> ...family units can make internal allocative decisions which facilitate the assumption of various emergency roles on the part of various family members [e.g., wife may go to EOC with husband and serve as secretary].

Of course, whether these hypotheses would be applicable to a broader range of disaster events than those their teams had studied remains unknown. Yet, as Mileti (1984) has pointed out, the distinction between role conflict and role abandonment has important policy implications, especially regarding the training of critical workers within such facilities as nuclear power plants. As with the distinction between discrimination and prejudice, behavior may be more easily altered by institutional constraint than by attitude. Yet, the bases for and limits to cross-hazard generalization, especially when the nuclear war case is included, remains very unclear and highly controversial, e.g., see Platt's (1983) review of Perry's text and Perry's reply (1983). Thus, Kreps (1984) appropriately has identified the issue of taxonomy as the most pressing basic research matter currently confronting the hazard studies field.

Given this research base, the range of potential study topics is enormous. Without trying to be exhaustive, however, a framework will be introduced whereby clusters of issues may be interrelated with other dimensions.

Research Issues

When potential role conflicts among emergency workers are placed within varying institutional and political contexts, two key questions emerge: (1) In what ways do the use and conceptualization of key terms (e.g., role conflict) constrain the range of generalization required for both policy and research needs? (2) How do role conflicts occurring at other points in the life cycle of a disaster constrain and perhaps recast those observed during the emergency period?

Examining Assumptions and Stretching Concepts

To address the first key question, three areas must be addressed: (1) What is role conflict? (2) Who are emergency workers? (3) What are institutional and political contexts?

What is role conflict? Starting with earlier studies like those of Gross et al. (1958), Robert Kahn and his colleagues at the University of Michigan (1964), or the study of State police officers by Preiss and Ehrlich (1966), it is clear that people frequently encounter conflicting messages as to what is expected of them. But as Bates and his colleagues (1963) discovered in their long-term followups on Hurricane Audrey, role stressors also occur in other forms such as role ambiguity and overload. When both intrasystem and intersystem levels are recognized as potential sources of stress, eight forms of ***system strain*** can be identified, four at each level: inconsistency, dissensus, ambiguity, and overload (Haas and Drabek 1973, pp. 239–243). More recent work, like that of French et al. (1982), underscores how such structural strains affect employee health and the complexity of coping behaviors produced.

The evidence to date points to four conclusions. First, role conflict should be redefined and probably relabeled as system strain, so as to capture the fuller range of phenomena. Second, all such normative or expectation sets should be defined explicitly so as to differentiate them from behavioral actions. Third, the consequences of structural strain deserve as much attention as its inputs. And finally, some research on consequences of structural strain should be conceptualized at the social system level, especially regarding the emergence and roles of varying interest groups.

Who are emergency workers? While research must be directed toward the more obvious categories of emergency responders--police, fire, and medical personnel, for example--emergency workers cover a much broader spectrum. Emergency management coordinators, plus a diverse cadre of voluntary units ranging from the Red Cross and religious organizations to more specialized groups like search and rescue teams, define the cast of characters in actual disaster responses (Dynes and Quarantelli 1980; Drabek 1983). In addition to agency employees, unofficial helpers often perform life-saving actions and make many other contributions (Drabek et al. 1981; Taylor et al. 1970). As recovery operations begin, agencies as diverse as public works units and mental health teams seek to aid in the healing process. All that participate may confront varying forms of structural strain.

What are institutional and political contexts? The response to any disaster occurs within a complex social environment. Depending on the disaster agent and other factors, the salient features of this environment can vary widely. The institutional context, both governmental and private, of a response to a transportation accident involving a toxic substance differs somewhat from the context of a response to a tornado or a threatened accident at a nuclear power plant. While certain agencies and authorities are common to all three, at least in terms of what may be planned or expected, each has its own defined turf.

One need not necessarily agree with Perrow's (1984) conclusions regarding the desirability of abandoning nuclear power to appreciate his insightful analytical juxtapositons of constraint structures that guide participants in this industry and their counterparts in petrochemical plants, air and marine transportation, mining, dam construction, and the more exotic areas of space exploration, nuclear weapons, and recombinant DNA technology. Failing to understand how these multilayered organizational structures are linked and the nature of the transformation processes used (linear vs. complex), "normal accidents" lead us to search for guilty individuals. However, such individuals may be guilty only of holding social positions located at a critical intersection among systems and characterized by great ambiguity or intense overload—be they plant operators at the Three Mile Island facility (Perrow 1984, p. 7) or fire officials in Indianapolis (Drabek 1968, pp. 113–121).

When a broad spectrum of disasters is considered, little is known about the relative patterning of structural strains or about their consequences for participants. Nor is much known about the impacts of actions taken by specialized agencies, such as mass media organizations. Case studies reveal perceptions of tension and at times the growth of negative attitude sets (Drabek et al. 1981), but the matter has not been addressed systematically (Committee on Disasters and the Mass Media 1980).

Extending the themes introduced above, i.e., role conflict as the independent variable and social systems as the units of analysis, studies should be directed not only toward the strain created by institutions but also toward the impacts of disasters on these "contexts." That is, alterations in sectors of the so-called institutional and political context may occur. These contexts are best conceptualized as horizontally diverse and vertically differentiated layers of social constraint. Neither the legal, nor the political, nor the economic are impervious to disaster-induced change. Indeed, one of the most healthy responses that might be taken by those experiencing the stress of being caught at the intersection of structural strains is to push for actions that reduce the inconsistencies and ambiguities that exacerbate the pain of response.

Structural Strains Across the Life Cycles of Disaster

Responses to disasters do not occur in a vacuum. Organizations have histories and exist within a complex web of social, political, and legal constraints. Role conflicts confronted during crisis responses are reflective of preexisting constraint patterns. An exclusive focus on the response period precludes complete understanding of the issue because important questions remain unasked (Hewitt 1983). With the intention of being illustrative rather than exhaustive, four disaster phases will be reviewed, and examples of structural strain within our present emergency management system will be highlighted.

Mitigation. Local emergency coordinators, like other local officials, confront dissensus on a wide variety of risk management issues. Currently, many communities are concerned with land use restriction proposals formulated to reduce the risk of flooding or earthquake. Like the storage and dumping of waste products, the transportation of chemical and nuclear substances, especially those under the authority of various Federal military agencies, is an escalating issue in many locales.

Efforts to increase hazard awareness or promote various mitigative programs often exacerbate these tensions (Drabek et al. 1983). Unlike the managerial problem of most aspects of emergency response, high levels of dissensus are reflected by the differing priorities and varying perceptions held by stakeholders (Petak and Atkisson 1982). Support for hazard mitigation policies can be mobilized at times. But within the complex of issues confronting most State and local decisionmakers, such matters rank rather low on the political agenda (Rossi et al. 1982).

All approaches to hazard mitigation may reveal fundamental differences in values. While Perrow was referring only to risk assessment, his perceptive comment has broad applicability: "Ultimately, the issue is not risk, but power; the power to impose risks on the many for the benefit of the few" (Perrow 1984, p.306). Thus, local emergency personnel, like their State and Federal counterparts, are located at the intersection of a series of structural strains. Little is known about their coping strategies or the consequences of differential modes of adaptation.

Preparedness. Today, the intergovernmental system remains in a highly strained condition because of efforts to encourage and implement programs related to citizen protection in the event of nuclear war. Although the phrases have shifted from "crisis relocation planning" (CRP) to "integrated emergency management systems" (IEMS), the issue is an important source of strain. While communities may vary widely, and certain samplings of public opinion indicate expectations of war wherein nuclear weapons are used (e.g., Nehnevajsa 1979), it is the perception of this author, at least, that an acute dissensus exists among agency personnel regarding current policies. Indeed, local and State emergency management directors have actively sought priority shifts.

Levels of government are interdependent. If they become identified as instruments of war, local emergency preparedness programs can be butchered. An illustration of this realization was the plea made last year by the national association of the directors of State emergency preparedness agencies—the National Emergency Management Association.

> We, as a nation, have become more sensitive to the need to exert every effort to avoid the horrors of war. As a result, many of the programs designed to respond to that eventuality come under close scrutiny and have become the subject of much discussion. If that is appropriate, and even desirable, the present debate has had an unnecessary adverse impact on all the programs on which state and local governments depend for the resources needed to protect the lives and property of their people ("State Directors" 1983).

Currently, the multihazard orientation being promoted by the Federal Emergency Management Agency (FEMA) through the IEMS concept may provide an important structural resolution. Evacuation planning for hurricane protection may have important carryover to the nuclear war case, for example. So, too, radiological training may be viewed as increasing the capacity of local hazardous materials response teams. But the matter of relative priority remains a key issue and illustrates a tension point within the system. To date, no research has been directed at such "role conflicts," modes of resolution, or long-term consequences for position incumbents.

Response. Strains that characterize preparedness and mitigation contexts also affect responses to disaster events. These perceptions, held by emergency officials, representatives from organizations with whom they interface, and the public at large, do not vanish during emergency response. Existing ambiguities and inconsistencies in concepts of organizational turf, authority relationships, communication flows, and the like guide the pattern of response. For decades, case studies have documented the curious juxtaposition of two contradictory image structures that are verbalized by emergency officials—intense cooperation among organizations vs. fragmented and inadequate cross-agency communications. These officials sense that their responses were poorly coordinated, but simultaneously reflect a postevent euphoria at having been challenged and gotten the job done.

Three areas of strain merit further investigation. First is the host of ambiguities related to issues of liability. One aspect of this are the varied State laws commonly referred to as "good samaritan" legislation. While corrective actions are in motion for certain categories of emergency workers, others have yet to sense the reality of the structured strain.

> The Hazardous Materials Advisory Council has assumed the leadership of a coalition of transport groups to encourage the passage of good samaritan laws throughout the country. State good samaritan laws are widely considered by the hazardous materials transportation and chemical industries to be essential for removing legal barriers to otherwise available and timely emergency responses to hazardous materials accidents....
>
> Industry efforts to get state legislatures to pass these laws began with a need to develop better emergency responses to incidents involving compressed gases in 1978. The National LP-Gas Association introduced model good samaritan legislation in the New Jersey State Legislature in 1978. Virginia was the first state to actually pass a bill covering compressed gases in 1979. Since them, six states have passed compressed gas good samaritan laws, six have laws covering all hazardous materials, and 16 states are considering legislation.
>
> The February 1978 derailment of several propane tank cars in Waverly, Tenn., underscored the need for good samaritan legislation, according to LPGA Vice President Dan Myers. 'Emergency officials were unable to get any company to respond, because of liability problems, until Friday. Meanwhile, the temperature had risen to over 50 degrees. The combination of stresses on the derailed tank cars and the higher temperature resulted in an explosion,' he recalled. 'The theory is that if someone had responded within 24 hours of the accident while the temperature was still low, conditions would have been right for safely off-loading the product. Lives would have been saved ("HMAC Leads" 1983).

Citizens, and many emergency workers, appear to have little understanding of such matters. Some field research has revealed that those responding to certain types of disasters, at least, report worry and fear of potential legal action (Drabek et al. 1981, pp. 242-243). Neither the extent nor consequence of this existent pattern of strain has been assessed.

The second area for investigation concerns the stress of emergency managers confronted with the task of trying to coordinate multiagency responses to large-scale disasters, especially those producing life-threatening situations or high death tolls. Authority conflicts and other forms of turf battles are pervasive. Overload and intergovernmental authority conflicts are exacerbated by inadequate cross-agency communications systems. Numerous case studies have documented the heroic efforts of those on the scene who struggle to lace together the varied actions taken by organizational personnel from highly diverse sectors of the community

(Barton 1969; Dynes 1970; Drabek et al. 1981). Yet, few really grasp the composition of the entire emergent multiorganizational response network. Failing to even conceptualize it, these systems remain unmanaged at worst, somewhat coordinated at best (Drabek, in press *a*).

Cross-event studies are required to better ascertain the effects of these experiences on emergency managers and their coping strategies. When events involve the private sector or the military, especially as the disaster source, e.g., explosion within a chemical plant, corporate interests may heighten the strain. Aside from a few comments like those offered by Quarantelli (1983) in his case study of a chemical tank explosion in Taft, Louisiana, few researchers have explored such strain or its consequences. Furthermore, alternative models of management must be explored so as to address ways to alter these strained structures, in addition to discovering improved coping strategies for those who may be episodically trapped within them.

Finally, research should address the role abandonment issue. Under what conditions might emergency workers choose to exit the work setting and temporarily seek refuge elsewhere? If not at work when the disaster (e.g., tornado) hits, what factors might precipitate a delayed mobilization? Clearly, organizational personnel evidence differential commitment levels during the normal workday. Natural disasters, however, typically evoke heightened commitment. Therefore, burnout and excessive fatigue are to be guarded against, not abandonment (Drabek et al. 1981; Mitchell 1983). Conditions that may generate role abandonment, however, can be hypothesized and should be researched through cross-event studies where periods of abandonment or delayed mobilization may be relatively brief. Among the conditions meriting followup are uncertainty regarding family well-being, emergent perceptions of illegitimacy of authority structures, undermined credibility of official information sources, and reduced belief in organizational continuity.

Recovery. Three areas illustrate the types of strains that characterize the recovery phase of disaster events. First, potential conflicts exist between citizen perceptions of official roles in crisis as opposed to noncrisis situations. Wolensky and Miller (1981) highlighted this area of strain through their followup interviews in four Wyoming Valley communities (northeastern Pennsylvania) that were hit by Hurricane Agnes (June 1972). In crisis environments, they argue:

> Not only is heightened demand stress likely, but normative definitions of officials' roles can be radically altered. ...Citizens' definitions of local officials' everyday roles were incongruous with definitions of their disaster roles, while officials maintained the same definitions for both environ-

> ments. Citizens' disaster definitions were for a much more active role while they favored a custodial orientation in the everyday situation. Officials saw their roles as basically custodial in the disaster and everyday environments (Wolensky and Miller 1981, p. 484).

Second, blame characterizes selected types of crisis situations. At times, well-intentioned bureaucrats become victimized as citizens seek to find the guilty (Bucher 1957; Drabek and Quarantelli 1967). Such actions may serve to aggravate tensions among organizational managers. In a litigative society, this aspect of "role conflict" merits study, for emergency workers are not exempt from blame. Blame placement, however, is not restricted to legal processes. Some emergency managers have described to this author, for example, how they successfully dealt with the stress of an emergency response, but suffered intently during a media "witch hunt" that followed. Despite pressures from some sectors of the society to restrict and constrain investigative efforts by the media, the structure of strain that places media organizations into conflict with others remains highly desired in our society as a necessary check-and-balance system. But the long-term consequences for those individuals who may become trapped within it following disasters remain undocumented.

In keeping with the point made above—that role conflict should be viewed as an independent variable for some research—a third area of strain in the recovery phase pertains to group emergence. Following such events as the incident at the Three Mile Island power plant, a wide variety of emergent groups were spawned as some citizens sought to resolve newly formed or heightened threat perceptions through collective action (Walsh 1981; Walsh and Warland 1983). As discussions began about reopening a unit that had been shut down but had not been directly involved in the incident (TMI-Unit 1), citizen groups on both sides of the issue emerged (Soderstrom et al. 1984). While relatively few studies have been completed to date (for summaries see Quarantelli 1984; Stallings and Quarantelli, in press; Drabek, in press *b*), such emergent groups represent important aspects of the institutional and political context within which emergency workers perform. Just as significantly, however, they illustrate another level of social phenomena that must be included in the research agenda, both as dependent and independent variables. For if the research on stress tells us anything, it underscores the importance of feelings of control and responses rooted in the belief that identified challenges are being met.

From this vantage point, the emergence of postevent treatment groups for both workers and victims also becomes an object of study. Horrifying events ranging from airplane crashes (Mitchell 1982), rock concert riots (Lindy and Lindy 1981), religious fanaticism (Jones and Fischer 1982), and others (Fillmore 1984) have precipitated increased awareness of the need for such treatment programs. The life cycles of such treatment units—including their legitimizing ideologies, changing goal priorities, structural designs, and patterns of implementation—constitute a significant element of the overall research agenda. As such, they constitute a form of emergent phenomena that parallels newly formed citizen groups or interagency coalitions.

Program Needs

The present research base justifies the following immediate program needs: (1) family information and evacuation service, (2) good samaritan legislation, and (3) multiagency authority and coordination projects.

Family Information and Evacuation Service

Emergency workers will perform more effectively if they are not plagued with uncertainties regarding the safety of family members. Depending on the nature of the emergency event, this may require only information, e.g., "our house was damaged slightly but we are fine." Infrequently, families of emergency workers do evacuate temporarily. When a "disaster subculture" has evolved, as along the Gulf Coast because of the regularized threat of hurricanes, and when forewarning is one of the event characteristics, uncertainties may be reduced and worker effectiveness may be sustained. However, the extent to which this behavior actually occurs remains undocumented.

Good Samaritan Legislation

Since good samaritan legislation varies across the 50 States as do legal opinions on numerous technical points, a model act is needed to guide structural change. Even after it is designed, however, implementation will be slow. Therefore, training programs should be developed so that emergency workers better understand the issues and limits of liability. Such programs could also stimulate public awareness of liability. As these programs develop, research should assess their implementaton and outcome. The urge to engage in acts of altruism, both among emergency workers and citizens, is intense following disasters. Often, altruistic actions are life saving. They must not be allowed to erode within the present litigative society.

Multiagency Authority and Coordination Projects

Many of the so-called role conflicts experienced by emergency workers stem directly from existing ambiguities in local, State, and

Federal policy. Some progress has been made recently, especially through the creation of the Federal Emergency Management Agency (FEMA) and its lead role designation. But turf conflicts probably are inherent in our political system. Case studies of events where such conflicts were acute could draw attention to this pressing problem.

Similarly, the diverse range of agencies that comprise the complex, emergent multiorganizational networks are difficult to coordinate in times of crisis. Emergency workers, especially those at executive levels, need to learn through simulated experiences how to better preplan and cope with this difficult managerial problem. Important progress has been made through programs initiated at FEMA's National Emergency Training Center. To date, however, these simulations have not become objects of research. Nor has any effort been made to transport the methodology into the field so as to maximize the range and number of communities that might be strengthened. As these efforts expand, however, research programs should be initiated so that the dynamics of emergency managerial coping behavior under stress can be better understood.

Conclusions

This brief analysis of the institutional and political contexts of role conflict among emergency workers leads to six major conclusions:

1. The existent *research base is woefully inadequate*. At best, it can provide only minimal guidance to either practitioners or policymakers on a large number of pressing social issues, e.g., nuclear power plant evacuation planning. Studies are required that implement common methodologies so that the generalizations of findings can be more precise.

2. As a concept, both for research and programmatic purposes, *role conflict should be conceptualized as structural strain*. Determinants and consequences must be understood better at both individual and social system levels.

3. The concept of *emergency workers must be defined broadly*. Top level executives in emergency organizations confront a different range of experiences than do workers at the scene of a crisis event, but both are stressed, sometimes acutely. Similarly, volunteer organizations and unofficial helpers provide significant contributions for many crisis responses. Their postevent suffering may be exacerbated because of the lack of organizationally based support systems to provide healing power to workers in emergency organizations.

4. *Emergency reponses occur within the patterns of structural strain that define the life cycle of a disaster.* Agendas for both research and programs must be conceptualized within this broader context. Significant interdependencies exist across these life cycle phases. Agency expectations that have been established through mitigation and preparedness activities, for example, are carried into the response to crisis. Institutional and political contexts define important constraints during any crisis response, but these too are not instantly manufactured. The range of research and policy issues that will surface in subsequent agendas should reflect this more comprehensive view.

5. *Organizational environments are subject to manipulation and change.* In contrast to a treatment orientation where emergency workers are viewed as potential patients suffering from role conflicts experienced during a crisis, social systems should be viewed as research objects and potential patients also. Interagency authority ambiguities can be clarified, as can legal protection of responders through altered good samaritan legislation, for example.

6. *Capacity to cope with structural strain*, including increased ability to identify it and better resolve it, *can be strengthened* through programs of simulated emergency responses. These must reflect a multiagency response and be realistic in other ways, too. If workers' families and media personnel, for example, have not been considered, the exercise has been oversimplified.

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Discussion

William J. Staehle

In his paper, Dr. Drabek presents an exceptional number of good ideas, virtually all of which merit further discussion and consideration. To ensure that I touch on the most important points during the limited time available for my response, I have structured my comments to Dr. Drabek's six conclusions. For each conclusion, I have attempted to elaborate on and reframe the relevant issues from my perspective as a practitioner involved primarily in the areas of mitigation and preparedness but having frequent interaction with emergency workers.

Dr. Drabek bases his discussion on the observation that crisis responses occur not in a vacuum but rather within broader and complexly interrelated institutional and political contexts. He proposes that we can better understand the problem of crisis response, as well as the range of potential solutions to it, by examining these contexts.

In arriving at this position, Dr. Drabek reviewed the current research base. This activity led him to his first conclusion: "The existent research base is woefully inadequate." He finds that "at best, it can provide only minimal guidance to either practitioners or policymakers on a large number of pressing social issues." These findings are based on Dr. Drabek's review of nearly 900 studies, a very prodigious undertaking that certainly gives him standing to comment. He found that role conflict among emergency workers has not surfaced as a major theme. But this appears not to be the focus of Dr. Drabek's conclusion of inadequacy. Rather, he is critical of the narrow orientation that most crisis response research has taken. Researchers have been focusing too closely on the individual hazard event "trees" in the crisis response "forest."

The consequences of this narrow orientation can be demonstrated through another analogy. If Johnny hits Mary, we can examine the problem from a least three perspectives. The most obvious is to focus in narrowly on the immediate situation to try to understand the behavior. But by doing so we have to recognize that our findings will be very specific and may not be transferable to similar situations such as George hits Sally. A second way to examine the problem is to look at it from the perspective of boy hit girl. This greater level of generalization may allow us to more readily compare this specific event to other similar events. Finally, we can examine the situation from the perspective that males are violent toward females. This orientation would allow us to develop a fuller understanding of the complex interrelationships at work and to consider the full range of existent social strains within which Johnny's behavior toward Mary occurs. In other words, Johnny's behavior did not occur in a vacuum, so if we really want to understand it we cannot look at it that way.

Each of these perspectives has its advantages and pitfalls but all are important. Dr. Drabek states that "studies are required that implement common methodologies so that the generalizations of findings can be more precise." If I understand him correctly, he is saying that researchers have to step back from the narrow focus of Johnny hits Mary and add to the research agenda the broader perspective. The broader studies would allow for the use of common methodologies so that we could integrate findings and better understand the commonalities among the responses to various crisis events, including the attitudes and behavioral manifestations of emergency workers.

While I have reviewed approximately 875 fewer disaster studies over the past year, I agree strongly with Dr. Drabek's reasoning and conclusion. However, as a practitioner I have my own problems with the adequacy, or inadequacy in this case, of the research base. Dr. Drabek implies that a critical standard for determining the adequacy of the research base is whether it provides guidance to practitioners and policymakers. Measured against this standard, I believe that a very large majority of disaster response research efforts are inadequate, not because of their content or approach, but because they are unreadable to practitioners and policymakers. Most research is conducted and published by the academic community. Due to the structure of this community and the pressures to publish in refereed journals, it appears to me that most research findings are ensconced in such academic jargon that they are effectively communicated to other researchers but not to practitioners and policymakers.

The problem is exacerbated by the multidisciplinary nature of the disaster research field. It appears that geographers write for geographers, sociologists for sociologists, and so on. Most practitioners and policymakers have not had the benefit of a formal education in emergency management and, at best, have to struggle through the literature. I have observed that, unfortunately, many have given up trying.

Clearly, this is a problem that must be confronted. This workshop is one example of the means available to do so. At this moment a practicing planner/geographer is commenting on a paper by a research sociologist in front of an audience of psychologists and policymakers--that's a start. The annual natural hazards workshop at the University of Colorado, Boulder, is another example of an effective forum to bridge the gap. If future research is to be effective in improving the emergency management system, and I believe that is the overall goal, then new programs must be developed to convey research findings to emergency managers.

Dr. Drabek's second major conclusion states that "as a concept, both for research and programmatic purposes, role conflict should be conceptualized as structural strain." He reaches this conclusion while exploring two questions:

1. In what ways do the use and conceptualization of key terms (e.g., role conflict) constrain the range of generalization required for both policy and research need? And more specifically,

2. What is role conflict?

In addressing the second question, he also responds to the first. Consistent with his criticism of the research base, Dr. Drabek suggests that role conflict is too narrow a concept to capture the full range of phenomena and that the concept of system strain is more appropriate. System strain, he points out, recognizes additional forms of role stressors. There are four types of system strain: (1) inconsistency, (2) dissensus, (3) ambiguity, and (4) overload. Each of these can occur at both intrasystem and intersystem levels, resulting in eight forms of system strain.

By suggesting that "role conflict should be redefined and probably relabeled as system strain," Dr. Drabek is advocating a more comprehensive and consistent framework for research studies on the subject. If utilized, it appears that this framework would contribute to the development of the common methodologies that he advocated in his first conclusion, and would permit greater precision in the generalization of findings.

Dr. Drabek summarizes his examination of the system strain concept by stating that the determinants of system strain and the consequences of it must be studied at both the individual and social system levels. I strongly agree with him. But I found the emphasis of one particular statement curious: "The consequences of structural strain deserve as much attention as the inputs." Had I written that sentence I would have found it necessary to reverse the emphasis. Taking for granted that the consequence would be the focus, I would say "the inputs to structural strain deserve as much attention as the consequences." Perhaps this reflects a difference in the general orientation of researchers and practitioners. Researchers tend to be role adapted toward the causal side, asking "why" questions, while practitioners tend to be more oriented toward the consequences, asking "what" questions. Clearly, both parties must ask both questions and develop an understanding of both causes and consequences of system strain.

The third major conclusion reached by Dr. Drabek is that "the concept of emergency workers must be defined broadly." This finding is in further response to his concern about the ways in which the use and conceptualizations of key terms constrain the range of generalization required for both policy and research needs. In exploring the question "who are emergency workers?" he points out that the spectrum is much broader than the obvious categories of police, fire, and medical personnel. To consider only the workers would be, once again, artificially constraining the problem. He identifies management officials, volunteer organizations, and unofficial helpers as providing significant contributions for many crisis responses and goes on to point out recovery groups that may also be involved. These worker groups may experience different forms of structural strain.

I agree with Dr. Drabek's conclusion that the term emergency workers must be conceptualized broadly, but I would suggest that perhaps the term should be broadened beyond the level he has presented. For instance, certainly municipal elected officials (e.g., the mayor) fill emergency roles during a disaster, as do some county and State elected officials. Elected officials often have the key decisionmaking responsibility during a disaster. In some cases, they are totally unprepared to assume this responsibility. This results, I believe, from a tendency of some elected officials to assign emergency preparedness a low priority, since disasters are such a low probability event. When these same officials are confronted with evacuation decisions or put in command of an entire response operation, structural strain can be expected to increase throughout the system.

Other groups that I would propose as emergency workers include the planners and officials who are primarily responsible for disaster mitigation and preparedness efforts. If we accept the notion of the life cycle of a disaster and agree that disaster response activities cannot be considered in isolation of the mitigation and preparedness efforts that precede them, then it seems to follow that those who are primarily concerned with mitigation and preparedness should be considered emergency workers in the broad context. In other words, are emergency management workers a subset of emergency workers, or is it the other way around? Or do the two terms represent identical groups? Emergency management workers might include a State flood plain manager or a State radiological emergency preparedness planner. While it may be unlikely that these individuals would respond to the scene of a disaster during the response phase, they do experience structural strain prior to, during, and following a disaster occurrence. One of the more troubling observations I have made is the inconsistency that emergency planners must sometimes confront when preparing response plans. Often these plans must comply with specific regulations or guidelines and be approved by a review agency. Due to the rigidity of the guidelines, the planner may be faced with the dilemma of preparing a plan that is in compliance, or preparing a plan that works.

The fourth conclusion presented by Dr. Drabek states that "emergency responses occur within the patterns of structural strain that define the life cycle of a disaster." This conclusion is related to the second key question posed at the beginning of the paper: "How do role conflicts occurring at other points in the life cycle of a disaster constrain and perhaps recast those observed during the emergency period?" Here again, Dr. Drabek is advocating that we not artificially constrain the problem by focusing too narrowly on the event. He contends that each of the four disaster phases—mitigation, preparedness, response, and recovery—has significant interdependencies with the other phases. He also stresses that role conflicts occurring during the response phase often reflect conditions that existed prior to the disaster. He then very effectively demonstrates, through examples, structural strain within each phase of our emergency management system. As Dr. Drabek points out, his examples are not intended to be exhaustive and, with some thought, certainly many others could be identified for each phase.

Of particular interest is Dr. Drabek's identification of three areas of strain occurring during the response phase that merit priority for further study: (1) issues of liability, (2) coordination of multiagency responses, and (3) role abandonment.

With regard to liability, I have observed that many emergency workers are poorly informed regarding liability issues, but there appears to be a growing awareness among them of the need to understand these issues. This would indicate that in addition to the adoption of good samaritan legislation, the features of such legislation and liability issues in general need to be incorporated into emergency worker training programs.

Dr. Drabek captures in two sentences the frustration sometimes experienced in emergency planning when he states that "few really grasp the composition of the entire emergent multiorganizational response network. Failing to even conceptualize it, these systems remain unmanaged at worst, somewhat coordinated at best." Turf battles and authority conflicts are indeed pervasive.

It is generally the responsibility of the Emergency Management Coordinator (EMC) to coordinate the multiorganizational response to a disaster incident. It is probably true, based on my contact with them, that many EMCs do not perceive the full complexity of the multiorganizational response network and consequently are ill-prepared to deal with it. This results in a muddling through approach to disaster management. But this is primarily a training problem. EMCs also face a number of other problems, some of a structural nature, that can limit their credibility among other emergency response agencies and consequently limit their effectiveness. These include:

1. Lack of command authority
2. The frequent part-time or volunteer nature of the position

3. A continuing association of EMCs with civil defense
4. Low visibility
5. Low levels of funding support
6. The sometimes perceived political nature of the position (appointment)

Thus, attitudes and perceptions formulated prior to the response to an incident may affect behavior during the response and further contribute to a poorly coordinated response.

In addressing the role abandonment issue, Dr. Drabek examines the conditions under which role abandonment might occur. While implying that the concept of role abandonment may be based on limited existing research findings, he suggests four conditions that merit followup:

1. Uncertainty regarding family well-being
2. Emergent perceptions of illegitimacy of authority structures
3. Undermined credibility of official information sources
4. Reduced belief in organizational continuity

I have never encountered an actual role abandonment situation. However, while working with emergency workers who would be called upon to respond to a radiological emergency in the area adjacent to a nuclear power plant, I have encountered otherwise dedicated workers who insist that they would not respond to such an incident. It is important to distinguish between attitude and behavior in such situations, and often their behavior belies their attitude, at least to the extent that they continue to attend training sessions. I believe that the critical variable in their expressed attitude is not one of Dr. Drabek's four suggested conditions, but rather their perception of the hazard and the risk associated with it. From my observations, responding to a radiation incident is perceived by these workers as an unacceptable risk, possibly because radiation is invisible, silent, odorless, and tasteless and is commonly associated with cancer. The fear appears to be intensified because there is no way of knowing whether one is being exposed to radiation without the use of monitoring instruments. Curiously, some of the same workers have enthusiastically responded to uncontrolled hazardous materials incidents where the unknowns were probably significantly greater than would be likely at a radiation incident. There is no way of knowing whether these workers actually would abandon their roles during a radiological emergency, but I suggest that perception of hazard and associated risk be considered along with Dr. Drabek's suggested conditions in followup studies.

The fifth conclusion presented states that "Organizational environments are subject to manipulation and change." Here Dr. Drabek suggests that we look not only to the emergency worker as the potential patient suffering from role conflicts experienced during crisis, but that we look also to the broader picture, the institutional and political systems that may have contributed to the role conflict. He recommends that we view these systems as potential patients as well. To carry the analogy futher, institutional and political systems can be doctored to relieve some of the causes of system strain. For example, regulation guiding emergency plan development can be modified so that conflicts between compliance and workability do not occur. Similarly, the authority necessary to effectively manage disasters can be assigned to a coordinator. I see this conclusion as the essence of Dr. Drabek's paper—that we need to broaden our focus to include the institutional and political contexts when attempting to understand the causes and consequences of system strain, and likewise we should be looking to those contexts when formulating solutions to these problems.

The final conclusion presented by Dr. Drabek states that the "capacity to manage structural strain, including increased ability to identify it and better resolve it, can be strengthened through programs of simulated emergency responses." He stresses that these exercises must involve a multiagency response and incorporate the roles of emergency workers' families and media personnel.

The best example of such broad-scale exercises with which I have had involvement are the annual radiological emergency response exercises conducted around all U.S. nuclear power plants. Clearly, these simulation exercises serve a beneficial function. But it is my observation that the most useful benefits resulting from these exercises are probably not those that were originally intended. I believe that the primary purpose of any exercise should be to test the performance of the system under close-to-actual emergency conditions. Exercises should be viewed as learning experiences designed to stress the system, to identify problems and deficiencies that should be remedied, and to develop a better overall understanding of the behavior of the multiorganizational response network. Due largely, I suspect, to the intense scrutiny of the radiological exercises, however, those that I have observed have been less oriented toward learning and identifying deficiencies than toward demonstrating strengths and masking deficiencies. The missing ingredient in these exercises has been the stressing of the system. The concern of emergency response agencies during the exercises is to look good and to receive a passing grade. Furthermore, considerable institutional and political pressure is placed upon them to do so.

The exercises are successful in another respect, however. Again, probably due to the high level of scrutiny and the fear of failure, the multiorganizational emergency response network starts gearing up for the exercise 3 or 4 months in advance by conducting training sessions, holding interagency meetings, and reviewing plans. Most of these preparedness activities would probably not be conducted at the same level of intensity if not for the impending exercise. The benefits resulting from these activities are significant and are generally transferable to other types of potential disasters as well.

In addition to simulation exercises, other efforts to manage structural strain should be considered at the mitigation and preparedness levels. To the extent that hazard mitigation is successful, no response will be necessary and role conflict during response will obviously not occur. To the extent that preparedness activities such as plan development, training, and exercises reflect an understanding of system strain and attempt to make appropriate adjustments in the institutional and political systems to reduce it, the emergency management system can be expected to function more effectively.

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4. Role of the Family: Both Haven and Headache

Charles R. Figley, Ph.D.

Introduction

How does a man who has just witnessed violence, brutality, and even death come home and be warm, sensitive, and loving? Society expects policemen to be able to cope with the demands of the job and to be able to turn their emotions on and off at will. When a police officer begins to experience conflict and tension on the job, however, everyone suffers—the officer, his family, the department, and the community. Much attention has been focused recently in assisting the officer in dealing with the stresses of the job and better learning to handle them. However, very little focus has been directed toward how the spouse is impacted and what can be done to cope with the resulting job and familial stresses (Besner and Robinson 1982, p. vii).

Purpose of the Workshop

We are gathered together these 2 days to focus on the emergency worker's performance during crisis situations. Consistent with the title of this workshop, certain role conflicts detract and certain support or facilitate such performance. Moreover, it is assumed that this performance is directly and indirectly affected by crisis situations of the past. Our goal, then, is to focus our attention on and give some concrete suggestions for future research and intervention programs that address these above issues.

Purpose of the Paper

My responsibility here is to focus on the family role, specifically, to address those family-related issues that are relevant to the emergency worker's performance. Thus, the following questions will be addressed:

1. What are the special pressures and resultant emotional problems that result from being employed in the emergency

fields in general and in highly stressful emergencies in particular?

2. How does the emergency worker's family role influence job performance, especially in crisis situations?

3. How does the role and job-related experiences of emergency workers influence the worker's family?

4. What can be done now and in the future to expand our knowledge about these issues and improve emergency worker effectiveness?

Emergency Worker Stressors

Much of my work has focused on the immediate and long-term consequences of traumatic stress. My work in this area began over 10 years ago with the study of combat-related stress disorders (cf., Figley 1978). It quickly became clear to me, however, that the stress reactions found among Vietnam veterans were similar to other groups of survivors reported in the literature, including those who care for victims and survivors (Figley 1979). As are other emergency workers, combatants are expected to effectively perform their duties under varying conditions. Only recently has the military recognized the deleterious psychosocial impact of extraordinarily stressful situations (cf., Stretch 1984*a*; 1984*b*) and developed methods to counteract their effects (cf., Figley 1984*b*).

Much of the research and treatment efforts thus far have focused on the victims of various crises. Even combat veterans, though traumatized in the line of duty, receive attention long after performing their duties. Of special concern at this workshop, however, are the men and women who are crisis specialists and who are exposed to potentially traumatic situations on a regular basis. There is no question that these professionals are traumatized by their experiences from time to time.

Moreover, emergency workers, as noted by others at this workshop, must cope with stressors on a daily basis. For example: the military (McCubbin et al. 1976; Hunter 1982); mental health disaster workers (Grossman 1973; Winget and Umbenhauer 1982); firefighters (Hutchison 1984); emergency medical personnel (Laube 1975; Shubin 1978; Skinner 1979; Budassi and Barber 1981; Parker 1984); and caregivers in general (Marx and Spray 1976; Maslach and Jackson 1979; Edelwich and Brodsky 1980; Maslach 1982; Rado 1984).

For police officers, for example, the following normative stressors have been identified: (1) erratic schedules (Niederhoffer 1978; Besner and Robinson 1982); (2) intraorganizational and interorganizational practices and characteristics (Eisenberg 1975); (3) criminal justice system (Eisenberg 1975); (4) continually watching people's distress (Alexander 1980; Besner and Robinson 1982); (5) repeatedly needing to respond quickly to situations (Besner and Robinson 1982); and (6) general burnout (Besner and Robinson 1982). Similar lists could be developed for other emergency workers.

In addition to various studies of specific worker groups, the research on burnout, especially among the helping professions, provides an important source of information generalizable to emergency workers (cf., Rado 1984). Yet, of most concern at this workshop is the crisis situation.

Emergency Worker Stress Reactions

Posttraumatic Stress Disorder

Background. Recently the American Psychiatric Association (1980) recognized the growing scientific evidence of the immediate and long-term emotional consequences of extraordinarily stressful situations. These include situations "outside the range of human experiences usually considered to be normal." They cite such experiences as war combat, rape, disasters, and crime victimization. Those surviving these events were identified as displaying a set of symptoms that include (1) reliving the event, both voluntarily and involuntarily, (2) attempts to avoid reexperiencing the event, (3) social withdrawal, and (4) a variety of associated features including, for example, sleeping problems and feelings of guilt about the event. Those exhibiting these symptoms are diagnosed as having some form (acute, chronic, or delayed) of Posttraumatic Stress Disorder (PTSD).

Of course PTSD is only the latest in a long list of terms associated with event-related anxiety. Hysteria (Veith 1965), phobia (English 1929), shell shock (Eder 1917), KZ syndrome (Herman and Thygesen 1954), post-Vietnam syndrome (Shatan 1978), delayed stress syndrome (Horowitz 1976), railway shock/Erichsen's disease (Clevenger 1889), and rape trauma syndrome (Burgess 1984) are either similar or identical concepts.

Importance. The current conceptualization of PTSD, however, because of its inclusion in DSM-III, is now a medically recognizable mental disorder or defect. Those diagnosed with PTSD are, by definition, impaired as a result of one or a series of traumatic events. Not only does this diagnosis suggest special prevention and treatment programs but also special consideration within the judicial and compensation systems.

War veterans diagnosed with PTSD, for example, are being compensated as long as they have the disorder. Special outreach and

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inpatient treatment programs have been developed. Similar programs have been developed for various victim groups, such as victims of rape and other violent crimes, disaster victims, hostages, and victims of family violence.

Occurrence. What are the circumstances within which emergency workers are traumatized? How many are actually traumatized? How many recover quickly and how many do not? It is nearly impossible to answer these questions with any degree of confidence. The few studies that asked the appropriate questions under minimally rigorous conditions found that a relatively small number of professionals develop PTSD. Stretch (1984*b*) surveyed two separate groups of active duty military who served in the Vietnam war theater. In a study of Army nurses, Stretch et al. (1984) found that only a very small percentage (.85 percent) of the 351 sampled who were in the military but not in Vietnam during the Vietnam era had PTSD. In contrast, and as expected, the 361 sampled who actually served in Vietnam during the war era had significantly higher rates of PTSD ($X^2=5.25$, df=1, $p<0.1$) than those who did not serve in Vietnam as a nurse, but significantly lower (3.3 percent) than civilian estimates of 18–54 percent. Schnaier (in press), for example, found that among her sample of 94 female members of a national veterans organization who served as nurses in Vietnam, 19.5 percent felt alienated from others, 19.2 percent were depressed, 16.1 percent were unable to feel close to someone they cared about, 10.3 percent felt emotionally numb, and 27.67 percent felt suicidal within the last month.

Application to emergency workers. Thus, there is evidence of the incidence of PTSD among significant numbers of Army personnel, including active, reserve, and veteran populations, associated with service in combat settings. Until similar studies of emergency workers are conducted, generalizability of PTSD rates beyond the Vietnam veteran population is risky. However, in the absence of clear proof of PTSD, several studies (e.g., Williams 1958; Diskin et al. 1977; Dunning and Silva 1980) suggest that lowered job effectiveness is the byproduct of disaster-related trauma. These conclusions are based on several studies (e.g., National Institute for Occupational Safety and Health 1975; Kroes 1976; Blackmore 1978; Ellison and Genz 1978) among police officers that found considerable emotional and psychosomatic problems.

Within disaster rescue situations, moreover, the evidence of symptoms of PTSD is even more convincing. Rescue worker psychological problems have been associated with such disasters, for example, as the Chicago Forum restaurant fire (Hutchison 1984) and both the 1978 San Diego (Davidson 1979) and the 1979 Chicago (Wagner 1979) air disasters. Families play an important role in preventing or mitigating these expected disaster-related stresses as well as those of a more routine nature.

Role of the Family

The role of the family of victims of crisis situations has been virtually ignored until recently (Figley 1984*a*). Certainly the psychological needs and difficulties of emergency workers are rarely addressed (cf., Raphael 1975). The role of the family has been ignored even more (Figley 1980; Dunning 1984). Yet the family is one of the most important resources to human functioning under adverse conditions (cf., Hill and Hansen 1962; Figley and McCubbin 1983). It is the primary source of social support (Burge and Figley in press).

Source of Stress

Most attention given to the family so far has focused on its deleterious effect on its members, especially children (cf., Yorburg 1983). The negative impact of family-related stressors on job performance is well known (cf., McCubbin and Figley 1982). Thus, it is not surprising that emergency workers' effectiveness may be jeopardized by family concerns.

More problematic in crisis situations, however, is the role of conflict between duty to family and duty to job. Killian (1952), for example, noted the conflict of rescue workers at the Texas City oil port explosion between staying on the job and assisting family and friends. In the same article, Killian quotes an Oklahoma State patrolman whose job was to reach outside help after a tornado had struck his town: "... driving by and not stopping to help those people who were looking to me as a friend was one of the hardest things I ever had to do" (p. 312). Similar problems have been reported for emergency medical personnel (Krell 1974) and police officers (Diskin et al. 1977).

Yet, in addition to being somewhat of a burden for emergency workers and testing their devotion to duty, families are a major source of social support. Recently the area of social support has enjoyed considerable scientific attention, especially as a buffer to stressful life events and experiences (cf., Dean and Lin 1977; Eaton 1978; Antonovsky 1981). Although research in this area has been problematic, including its conceptualization and measurement (Thoits 1982; Gottlieb 1983), the family has been found to be the primary source of social support (Figley and McCubbin 1983; Figley 1984*a*).

Elsewhere the critical importance of the family as a source of stress to traumatized individuals has been discussed. For the emergency worker exposed to an extraordinarily stressful situation, the family plays a key role in facilitating emotional recovery from the event in four sequential ways: detecting the traumatic stress, confronting the trauma, urging the recapitulation of the catastrophe, and facilitating resolution of the trauma-inducing conflicts (Figley 1983).

Emergency Worker Families' Stressors

There are costs to caring, however. Families, just like emergency workers, are exposed (though indirectly) to enormous stressors and must somehow learn to cope (Figley 1982; Kishur 1984; Kishur and Figley 1984). Unfortunately, as noted earlier, the scientific literature focusing on the stressors facing emergency workers is extremely small. Most of the attention has focused on professions that use deadly force: the military and police officers.

According to Gisa (1980), the hardest adjustment in being married to a police officer was not fear of his or her safety, but coping with the personality changes in their spouses. Reiser (1974) notes that a police officer "... may become emotionally cool and lose some of his 'love' for his wife. Consequently, she feels rejected, alienated, and reacts in ways that significantly influence their total relationship, including communication, sex, and value systems" (p. 156).

Several sources (Webber 1974; Niederhoffer and Niederhoffer 1978; Besner and Robinson 1982) report that police officers' wives report feelings of being shut out, isolated, and lonely. This is due in part to the officer's wanting to protect his family from the traumas he or she endures. Also, many departments restrict the information an officer may share with others (James 1975; Dunning 1984).

Marital Stressors

As a result of these extraordinary and normative stressors, the impact of work on marriages is enormous (Handy 1978). Stratton (1976) identified six types of impact: (1) suppression of emotion, (2) overprotection of family members, (3) displaced anger and frustration, (4) ineffective coping mechanisms, (5) unspoken fears, and (6) the need to be taken care of by the spouse and entire family. Also noted by Besner and Robinson (1982) are officers' (7) attempts to place restrictions on family's freedom and mobility, (8) use of drugs and alcohol, and (9) feeling drained from work and unable or unwilling to attend to family matters.

Police officer families appear to have much in common with families of other emergency workers. Niederhoffer and Niederhoffer (1978), for example, have noted the occupational role similarities between police officers and their families and physicians and their families. McCubbin et al. (1976) and Hunter (1982) report difficulties similar to police officer families among military families.

Implications

Programmatic Research

Obviously much more research is needed to develop useful theoretical models for understanding and helping emergency workers and their families. Certainly the extant models of victim response (cf., Figley 1985) are good starting points. The framework offered by Bonnie Green and her colleagues (Green et al., in press) provides an excellent typology of the most critical parameters of the emotional recovery from traumatic events and is applicable to emergency workers as well as the victims they assist.

In addition to developing a unified theory of emergency worker/family adjustment, research in this area should be guided by three interrelated goals:

1. Provide information on the incidence, prevalence, and effects (especially on work performance) of posttraumatic stress disorder and other emergency work-related problems among emergency workers and their families in concert with major individual and interpersonal resources

2. Provide a comprehensive description of the life adjustments of emergency workers/families: the problems they face, the effective and ineffective methods of coping, and the overall quality of their lives

3. Identify the points of interface between the role responsibilities of work and family: where they enhance and where they retard worker effectiveness

Programmatic Intervention

Others at this workshop will talk about treatment, prevention, training, and other methods of intervention that can be employed now, based on extant research. Certainly, as research proceeds, findings will suggest areas and points of intervention, including those that appreciate the work-family interface. In addition to programs focusing on the amelioration of PTSD at both the familial (Figley and Sprenkle 1978; Stanton and Figley 1978) and individual levels (Figley 1978; Figley 1984*b*), efforts should be made to more effectively prepare both the workers and their families for the psychosocial aftermath of emergency work. Moreover, ongoing support programs should be established both for family members (especially spouses) and workers, particularly following an especially traumatic emergency.

Summary

What has been suggested here, through a selective review of the research and treatment literature, is that there are far more similarities among emergency workers and emergency victims than previously suspected. These similarities are important in developing a unified view of human response to traumatic situations and of the indirect impact on the participants' social support systems. These systems, particularly the family, are, at times, more profoundly affected than the participant. The family is potentially the single most important coping resource for emergency workers. By understanding the complex ways workers draw from and affect their families, we both protect this vital resource and facilitate its positive influence on emergency workers' effectiveness.

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Discussion

by Srinika D. Jayaratne, Ph.D.

Dr. Figley has raised some important and interesting issues concerning the role of the family in dealing with work-related stress and implications for research and intervention. I wholeheartedly agree with Dr. Figley that the family has been overlooked for the most part in dealing with these situations. In fact, in a recent article, Ann Crouter considered the situation and called it "the neglected side of the work-family interface" (Crouter 1984). Her attention was mostly on the effects of family stress on the workplace.

My discussion will first focus on sources of stress from within the workplace that could be experienced by emergency workers and will then consider the notions of social support in reducing such experienced stress, paying particular attention to the family. Finally, I will discuss issues related to intervention with emergency workers and their families.

Sources of Stress

There is considerable agreement that the sources of stress for emergency workers reside in two major dimensions (Graham 1981; Mannon 1981; Mitchell 1982; Mitchell 1983). The first source of stress is *job-related*, which in turn has been divided into two components—those related to organizational factors and those related to patient factors. The organizational stresses range from physically dangerous work conditions and often boring hours of inactivity, to poor pay and shift change problems. In contrast, the patient-related problems deal with the delivery of services, and refer to such things as hostile patients (victims) and families and the everpresent possibility that even a small mistake may be potentially catastrophic.

In considering factors that could affect an individual's mental and physical well-being within the context of the workplace, it may be too narrow to consider only stresses. To some extent, this may be a definitional and conceptual issue, but it is worthy of discussion. What are the missing elements of the job? Do workers' expectations of the job correspond to their practice on the job? Some authors have begun to refer to these elements as *job deficits*

(Cherniss and Krantz 1983; Eisenstat and Felner 1983; Farber 1983; Jayaratne and Chess 1983; Ianni and Reuss-Ianni 1983). For example, lack of challenge, lack of promotional opportunities, or inability to utilize one's skills may be viewed as deficits rather than stresses. In fact, some of these factors have emerged as better predictors of job satisfaction in research among human service professionals. To the extent that this is a valid conceptual distinction, we probably ought to be paying closer attention to those aspects of the job that are *not* present as well as those aspects of the job that appear to be overwhelming.

Aspects of stress and its effects have been studied extensively among a variety of professions, typically under the rubric of stress, strain, and burnout. The remedies have ranged from teaching workers to relax and join or start social support groups, to basic structural changes in organizations aimed at reducing conflict and ambiguity or increasing pay and promotional opportunities. What is abundantly clear is that some aspects of the job are inherently stressful, and nothing can be done to eliminate the stress. What is equally clear is that other sources of stress, primarily those related to organizational structure, can be changed, and they need not be an inherent part of the job. Regardless of what can or cannot be changed, the workers in such situations will experience job-related stress.

The second source of stress is somewhat more personal and *family-related*. As Dr. Figley has so aptly pointed out, the family is not only a stress absorber but also a potential stress producer (Figley and McCubbin 1983; Figley 1984). Unfortunately, most of the work on this family-work interface has been conducted under the former assumption. In fact, researchers have been almost unwilling to look at the family as a potential source of stress and instead consider only its munificence as a support system. In effect, the interactive element has been left out. If job stress affects the worker's mental and physical well-being, it must in turn affect the worker's family. If, on the other hand, the new worker enters a job while experiencing marital conflict, it must in turn affect the worker's job experience. A unidirectional model will not suffice if one is to study the work-family interface.

If we accept the fact that these stresses and deficits exist and that they emerge from a variety of sources, what do we do about it? It is in this context that social support has been promulgated as a dimension of significant import (see, for example, Cobb 1976; Hunt and Hunt 1977; House 1981; Gottleib 1983).

Social Support

Dr. Figley has presented a powerful argument as to the value of social support in alleviating or mediating the negative effects of stress. Much can be said about the positive value of social support, and the literature on burnout, for example, has constantly argued for its inclusion as a legitimate factor in dealing with the negative effects of stress (Berkeley Planning Associates 1977; Daley 1979; Shannon and Saleeby 1980; Pines et al. 1981).

Some other issues, however, need to be addressed. First, it is possible that the value of social support as a stress reducer may have been oversold. The literature is consistent in its documentation of a strong negative correlation between stresses, strains, and social support. On the other hand, the data on the buffering effects of social support, that is, the ability of social support to actually reduce stress, is not conclusive (see, for example, Jayaratne et al. 1983; Jayaratne and Chess 1984; Pinneau 1976; LaRocco and Jones 1978; Lin 1979). In fact, some literature has even suggested that attempts at generating social support may lead to negative support (Berkeley Planning Associates 1977; Barad 1979).

The second concern, the definition of social support, is somewhat more theoretical. By and large, much of the common usage of the language, as well as many of the empirical studies on the topic, equate social support with emotional support. But, as House (1981) points out, social support is a multidimensional concept. Different types of support (such as informational, emotional, appraisal, and instrumental support) may have different valences for different individuals under critical incidents of stress. Future research as well as intervention efforts should pay heed to these differences lest we overlook some critical aspects in the social support arena (see, for example, Cobb 1976; Kahn and Antonucci 1980; Gottlieb 1983).

In my own research with child welfare workers, we have found that the worker's perceptions of job competence strongly buffer against stress and burnout, whereas perceptions of emotional support do not. We therefore speculated that the hiring of competent individuals may result in less turnover and burnout than the offering of emotional support after the fact. Clearly, these issues may not directly affect emergency workers given the nature of their jobs and technical training. The issue, nonetheless, is worthy of consideration.

The corrolary of this situation, which Dr. Figley has presented—the effects on the family of providing social support—is of equal importance and probably the most neglected of the various dimensions. The other aspect of this dynamic situation is the effect of family stress on the work situation, another dimension in need of research.

In one of the few conceptualizations of family influences on the workplace, Kanter (1977) discussed several ways in which the family makes its presence known in the work world. "If the emotional climate at work can affect families, so can a family's emotional climate and demands affect members as workers" (Kanter 1977, p. 56). The Kanter statement clearly presents an interactive and systemic situation. Given the nature of emergency medical work, this question should not be laid on the back burner. While family members may be quite capable of providing the necessary support to the worker, the provision of this support must make itself felt—the stress absorption issue referred to by Dr. Figley. Whether this effect is positive or negative may be a direct function of the coping methods employed by the family members. This situation is not akin to the "corporate wife." Given the economic status of most paramedics, more than likely a large proportion of the paramedic spouses work as well. Who attends to their stresses? (See, for example, Boss et al. 1979; Maynard et al. 1980.)

Once again, let me draw on my own work with child welfare workers, who happen to be primarily female, to illustrate a point. These child welfare workers are quite often called upon at night to go into potentially dangerous situations where abuse has been reported. When questioned about their husbands' responses to such situations, the majority simply indicated that their husbands would rather have them quit their jobs—and many do quit rather than fight at home. Clearly these workers are existing in a nonsupportive family environment with respect to their work. Therefore, if the worker does not quit the job, what is the impact of this marital stress on job performance?

To some extent, such scenarios point to the importance of coping methods for adequate work and family functioning. In effect, both the workers and the spouses are in a terrible quandary. If the workers bring the work stresses home with the hope and expectation that their spouses will help them cope, they may trigger marital stress. If they are sensitive to this possibility, they may compartmentalize their problems and deal with their problems "at the ranch." If, on the other hand, marital conflict is present in the workers' families, then it is even less likely that the workers will bring the problems home, since their expectations of sympathy and support may be somewhat different. This, in turn, may exacerbate family conflict if spouses view worker unwillingness to talk as simply another indicator of conflict and distancing.

The workers' spouses are in a similar quandary. They may not want to ask too many questions for fear of prying. On the other hand, if the workers do open up, spouses may feel inadequate and incapable of providing the necessary help, or perhaps even resentful of the demands made on their emotional selves. Who is there to help with their own problems at work and at home? Clearly, we have a dynamic situation with much potential for negative reciprocity.

Prevention and Amelioration

Just as the problem is multifaceted, so too is the design of intervention plans. Since the problem is viewed as an interactive one between the family and the workplace, the interventions must take into account the ramifications of this interface as a central component. As Dr. Figley has stated, it may be necessary to conduct proactive interventions both at the workplace and at home. Some efforts should be directed toward the organization, other efforts toward the individual worker, and still other efforts toward the family. For the purpose of this discussion, I will isolate my comments to the work-family interface.

One assumption we must make is that emergency work is inherently stressful. As such, the first step may be the introduction of a family education program at the time of hiring new personnel. If the spouses and the workers are sensitized to the nature of the work and its possible consequences, they may be better prepared to handle the work-related stresses when they spill over into the family environment.

Dr. Figley referred to postemergency debriefing procedures, which are similar to what Mitchell (1982) calls critical incident stress debriefings (CISD). Clearly, this stress reduction method is aimed directly at the worker. The primary focus of such procedures is to help the workers talk through their experiences, allowing for ventilation and assessment and the provision of support. It may be necessary, perhaps, to carry the CISD procedures a step further when workers are married. There may be a need for attention to how and what the workers will discuss with their spouses. Such a preparatory procedure may mitigate to some extent the concerns workers may have about responding to spouse questions and their ability to convey their feelings and thoughts.

Given the typical symptoms associated with the stress situations that Dr. Figley has discussed (such as depression and impaired social relations), a third proactive strategy may be the establishment of a spouse network. This may take the form of an official group that meets at a regular time with a trained leader, or it may take the form of a more loosely knit group. Regardless of the form, the purpose would be to help the spouses help themselves and their families deal with the stresses associated with the job.

There is some reason to believe that when individuals are "burned out" they may not be sensitive to their own behaviors and feelings (Daley 1979). Thus, a fourth interventive strategy may be to educate spouses on the symptoms of stress, including the possibility of posttraumatic stress disorder. Such symptom recognition is not suggested as a precursor to self-corrective behavior, but rather as a signal for the family to seek help if necessary. The help-seeking behavior in turn may be facilitated by the presence of the network groups suggested earlier.

In summary, considering the comments and observations made by Dr. Figley, it appears that a proactive stance in developing interventions for emergency workers may be beneficial. These interventions should have a family system focus rather than a purely individual orientation. Such an effort may not only help the workers and their families cope with stress, but it may also help the emergency service system retain more experienced workers.

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Part II

INTERVENTION AND PREVENTION PROGRAMS

5. Healing the Helper

Jeffrey T. Mitchell, Ph.D.

Introduction

The broken bodies and flaming wreckage of such tragedies as the 1978 Pacific Southwest Airlines crash in San Diego, the 1981 Hyatt Regency Hotel collapse in Kansas City, and the 1982 Air Florida Airlines crash in Washington, DC, have dramatically accelerated a growing trend among health care providers to recognize and appropriately provide for the mental health needs of emergency personnel.

Few people, besides the families of the victims, have more personally experienced the legacy of horror that remains in the wake of such human carnage than the emergency services personnel who worked at the scenes, or the physicians, nurses, and hospital staffs who either provided definitive care at their facilities or stood by, in certain situations, knowing there were no survivors and that their skills and care could not be directly applied. Months and even years after a catastrophic or intensely emotional incident, emergency workers are still experiencing the effects of the tragedies. Many of them continue to exhibit a host of symptoms including nightmares, insomnia, depression, marital discord, job dysfunction, irritability, unusual fatigue, anxiety, gastrointestinal upset, migraines, and amnesia long after the event has passed (Ilinitch 1977; Duffy 1979; Freeman 1979; Time Magazine Staff 1979; Graham 1981; Mitchell 1982).

This paper reviews the literature related to the mental health of emergency personnel, the psychological complications likely to be encountered by them, and some of the strategies available to counteract the emotional aftershocks of emergency work. Additionally, this paper presents some recently obtained data to partially fill the research void associated with emergency workers.

Ignored Warnings and False Beliefs

Some mental health professionals had been warning their colleagues in medicine and mental health for years that rescuers and other emergency care personnel, at all levels, are susceptible to a wide range of emotional aftershocks directly related to their work with people under stressful conditions (Kliman 1975; Freudenberger 1980; Mitchell 1982*a*). Warnings, however, were largely ignored until dramatic evidence of short- and long-term psychological disruption came into focus after disasters like those mentioned above. Unfortunately, much of the evidence of psychological disruption remains in the form of anecdotal records, and this fact has not always encouraged the funding of specialized research, training, and service programs for emergency personnel. Program administrators, in the face of budgetary constraints, have not been willing to fund special programs for emergency personnel since few people could accurately identify the numbers of emergency workers emotionally affected by their work and in need of assistance. Many even assumed that those affected by emergency work were very few in number.

Emergency workers themselves have often resisted efforts to research them or to provide special assistance programs for their benefit. They have feared that they would be perceived by their colleagues and the public as mentally weak and unstable if they admitted to feeling anxious or otherwise upset by victims or the daily horrors they witness. In general, emergency workers are quick to suppress their emotions and keep a calm facade in the face of turmoil. Perhaps, as Duston (1979) points out, when denial is present in those exposed to severe stress, it indicates terror on the part of the person who continues to use the defense in the face of obvious facts (O'Brien 1979; Graham 1981).

Additionally, many who are responsible for the training of emergency personnel have assumed that emergency workers will be able to manage the stress of their work without experiencing personal psychological disruption. The assumption here is that a high level of technical training combined with a "stiff upper lip" will obliterate any ill effects of working with people in crisis. On this issue, John Duffy, a psychiatrist specializing in disasters, says emphatically, "To suggest that these individuals are trained to walk among the carnage, burning human tissue, skulls, body parts is ludicrous" (Colen 1979).

The Physical and Psychological Impact of Emergency Stress

Direct work with people in and of itself is emotionally stressful (Maslach 1978). The added responsibility for the well-being and/or lives of others has been implicated as a source of serious stress in health care workers (Stanley and Saxon 1980) and in police officers (Maslach and Jackson 1979). Excessive contact with people in need of help produces feelings of anger, embarrassment, anxiety, frustration, fear, and despair (Maslach 1978; Kahn 1978; Maslach and Jackson 1979; Cherniss 1980; Adams 1980).

Emotional sequelae of severe stress are not the only effects

Emotional sequelae of severe stress are not the only effects encountered by emergency workers. Serious disease entities may arise in many people exposed to severe and/or recurrent stress. Mulvihill (1980) points out that the wear and tear caused by stress on the body produces structural changes such as the deformities of arthritis, stress ulcers, and hormonal imbalances. Frankenhauser (1980) suggests that increases of catecholamines as a result of stress causes functional disturbances in body organs and systems that may eventually lead to disease. Levine (1971) associated high levels of the stress-triggered body hormones with psychosis, convulsions, and electrical brain wave activity disruption. Holsti (1971) found that individuals subjected to high stress experienced distortions in time perspective and had increased error rates. Individuals under stress also initiated less activity than usual and became more rigid in their thinking. Problem-solving behaviors decreased substantially. Keena (1981) found that emergency medical technicians experienced a 50 percent injury rate when they were working to free trapped auto accident victims but only a 22 percent injury rate while working at scenes where only property and no victims were involved.

The range of symptoms of stress, both in quality and quantity, is impressive. Byl and Sykes (1978) reported fatigue, dizziness, and anxiety in stressed workers. Sedgwick (1975) found the following common symptoms exhibited in persons experiencing stress: withdrawal, somatic complaints, decreased ability to think clearly and master tasks, and an increase in distractability and self-consciousness. Rigidity and inflexibility were reported by Lazarus (1969), while Titchener and Kapp (1976) found disorganization, sluggishness, poor emotional control, grief, despair, sleep disturbance, nightmares, obsessions, depression, anger, visual flashbacks, and feelings of helplessness and inadequacy in individuals faced with overwhelming stress such as in a disaster. Mitchell (1982, 1983*b*) noted the appearance of similar symptoms in emergency personnel. Lippert and Ferrara (1981) reported that police officers who took a human life in the performance of their duties experienced strong feelings of guilt, anger, immobilization, and denial.

Some emergency workers who may have demonstrated proficiency in previous stressful situations may decompensate upon continued exposure to severe stress. They become gradually less functional and may develop crippling phobic avoidance behaviors. This very phenomena was noted during the Second World War in England. Veteran fire brigades and rescue workers became increasingly more dysfunctional in the presence of repeated bombing raids. They reacted to the same types of dangers with decreased activity levels, helplessness, aimless wandering, apathy, or mute, motionless behavior (Glass 1959). The mental stresses associated with disasters have even been known to contribute to self-destructive behavior on the part of rescuers (Frederick 1981).

Long-Term Effects of Stress on Emergency Workers

Emergency personnel will often suppress emotional reactions experienced during the emergency because of the fear of being incapacitated by those emotions. The feelings may be transformed later into nightmares, flashbacks, and other expressions such as humor, excessive physical activity, or some maladaptive techniques such as emotional outbursts (O'Brien 1979; Forstenzer 1980). Frederick (1981, p. 17) states that these symptoms and many others "...can occur long after the crash site has been cleared and the physical injuries have been treated."

Freeman (1979) noted that police officers who worked at the scene of an aircraft disaster were requesting counseling and other psychological support for a year afterward. The use of psychological counseling services rose from 5 (11.9 percent) of 42 police officers before the disaster to 11 of the 42 (30.9 percent) in the year following the disaster. Some officers and other emergency workers had to be retired after working at an aircraft crash site (Cohen 1980).

Eight weeks after the crash of Air Florida 90 in Washington, DC, emergency service personnel (fire, emergency medical, police, and their administrators and supervisors) were still experiencing the following symptoms: anxiety, fear, feelings of guilt, depression, grief, doubts about themselves and their capabilities, anger, irritability, sleep disturbance, nightmares, nausea, withdrawal from contact with others, lowered sexual and eating appetites, visual flashbacks, a strong need to talk about the incident over and over again, a need to obsessively read printed material about and view still and motion photography of the incident, concern for the well-being of coworkers, excessive denial of any symptoms, a total withdrawal from any discussions or photographs of the incident, a need to fix blame, a desire to talk with the survivors they had aided, a strong need for reassurance that they had done their best, a very strong feeling of being unappreciated by superiors, and resentment for not having received appropriate credit in the media for their work during the disaster (Mitchell 1982*b*).

Psychological Defenses Employed by Emergency Workers

Withdrawal is one of the most common defenses utilized by people under stress (Edelwich 1980). Emergency personnel as well are prone to use this less effective coping behavior in their efforts to manage their stress (Mitchell 1983*b*). Withdrawal is usually accompanied by a decreased sensitivity to others and a focus on oneself (Sedgwick 1975).

Often withdrawal from patients increases feelings of guilt and shame for emergency workers, especially those in medicine (Appelbaum 1981). They may then attempt to shift their attitudes about patients from positive to negative. For example, a passive patient is thought of as an object such as a rock or a vegetable (Maslach 1978). If patients can be thought of badly or as objects, it is easier to withdraw from them without feeling guilty. When it is not possible to think of people in the negative, emergency workers are likely to turn some of their frustration inward on themselves, and the end result is a serious depression (Patrick 1979).

Emergency personnel often attempt to suppress unpleasant memories. They may refuse to discuss their daily activities with their spouses and loved ones. They claim that this is to protect their loved ones from the horrors they have experienced. But it also serves very well as a buffer that prevents them from reliving those horrors (Maslach 1979).

Many emergency workers frequently experience a problem in winding down after they have been exposed to the almost daily horrors of death, destruction, and coping with the needs of hurting human beings. The knowledge that a lowered alert status can lead to small mistakes that can have catastrophic consequences causes them to choose to remain in a chronic state of hyperalertness even when off duty. This hyperalert condition may be related to the psychological theory that cues about danger may also imply cues about one's security (Miller 1979). Most inactive emergency personnel do not know how to truly relax and how to use their down time to their benefit (Johnston 1979; Graham 1981).

Mitigating the Impact of Stressful Work

Frederick states that the severe disturbance in the physical and emotional equilibrium of emergency workers can be countered. He suggests that "appropriate mental health services available in moments of crisis and disaster could...reduce the long-term psychological and somatic impact of the event...." (Frederick 1981, p. 6).

Mitchell (1983*a*) has developed a psychological debriefing process for emergency personnel. The group process, called the Critical Incident Stress Debriefing (CISD), is led by a trained mental health professional and is designed to allow emergency workers an opportunity to ventilate their feelings after a major situation. It assists the majority of emergency personnel in understanding their reactions, and it reassures them that what they are experiencing is normal and common to most of those who were involved in the incident. CISD also allows for group support and an opportunity to find those who may be in need of short- or long-term therapy.

The main goals of CISD can be summarized by the following closely related set of objectives:

1. Ventilation of intense emotions
2. Exploration of symbolic meanings
3. Group support under catastrophic conditions
4. Initiation of the grief process within a supportive environment
5. Reduction of the "fallacy of uniqueness"
6. Reassurance that intense emotions under catastrophic conditions are normal
7. Preparation for the continuation of the grief/stress process over the months to come
8. Warning of the possibility of the development of a variety of emotional, cognitive, and physical symptoms in the aftermath of a serious crisis
9. Education regarding normal and abnormal stress response syndromes
10. Encouragement for continued group support and/or professional assistance

CISD is a structured group process, applied in the aftermath of events that have held powerful emotional impacts for emergency workers. Examples of powerful emotional events include the death of a fellow worker in the line of duty, the suicide of a coworker, the death of a civilian (nonemergency worker) as a result of emergency interventions in the field such as a vehicular accident or shooting, the death of a victim after a period of dramatic and prolonged rescue effort, the death of a child under particularly tragic circumstances such as the San Ysidro McDonald's shootings in July 1984, a mass casualty incident, or any situation that holds an extraordinary level of emotional impact beyond the normal coping abilities of emergency workers.

The Critical Incident Stress Debriefing process is a mixture of exploring reactions, emotions, symptoms, myths, beliefs, and thoughts of emergency workers after an unsettling experience. There is also an opportunity in the typical CISD to provide didactic material on the usual stress reactions in emergency workers (Mitchell 1982*a*, 1983*a*).

Reports from emergency workers involved in debriefings have been very encouraging. Workers generally report that they have been able to express themselves to each other and to a concerned and well-trained clinician. They express relief that they were not alone in their reactions to a powerful event. The reassurance provided in the debriefing encourages them to express rather than suppress their emotions (Judge 1984). Long-term destructive aftereffects of a traumatic incident are less likely under such circumstances. The establishment of a network of concerned coworkers is often the main CISD feature that discourages isolation and emotional suppression.

Collecting Relevant Data

This author recently collected some data in an effort to partially fill the current void in available research findings on emergency personnel and to gain a better understanding of the numbers of emergency personnel who may be in need of mental health services such as Critical Incident Stress Debriefings and short- and long-term therapy. Prior to conducting workshops on the topic "Emergency Services Stress" with emergency personnel in four States, survey forms were distributed to the participants. The participants were instructed to fill out the forms before the presentation began, and the forms were collected immediately. The survey sought information on the participants' belief in the "burnout" phenomena as defined by Maslach (1978). The survey also requested the participants to note if they had personally experienced physical or psychological symptoms as a result of their work in emergency situations and whether they had participated in a multicasualty incident (10 or more victims). Additionally the survey asked whether the participants thought psychological debriefings as defined by Mitchell (1983*a*) were necessary after major emergencies.

Participants

The sample participating in the survey consisted of 360 emergency workers from four States: Connecticut, Maryland, Illinois, and Wisconsin. The participants were firefighters, paramedics, emergency medical technicians, police officers, nurses in emergency rooms and critical care units, emergency administrators, and other emergency workers such as dispatchers and morgue workers. Table 1 shows a numerical breakdown of the participants by category. One hundred and thirty-four of the participants (37.2 percent) were required to attend the program as part of their job. The remainder came of their own volition. The average age of the participants was 38. The average time of service in emergency work was 12.6 years. Two hundred and fifteen (59.7 percent) of the participants were career personnel, 93 (25.8 percent) were strictly volunteer personnel, and 52 (14.4 percent) served in both career and volunteer capacities. Two hundred and sixty-eight (74 percent) were male and 92 (25.5 percent) were female. Two hundred and

Table 1. Numerical breakdown and percentage of participants by category and by State

Participant group	EMS	Fire	EMS & fire	Police	ER/ICU/CCU nurses	Admin.	Other
Connecticut instructor N=42	16(38%)	3(7.1%)	11(26.1%)	1(2.3%)	6(14.2%)	5(11.9%)	0
EMS N=37	19(51%)	0	9(24.3%)	3(8.1%)	6(16.2%)	0	0
Illinois N=74	3(4.0%)	60(81.0%)	2(2.7%)	7(9.4%)	1(1.3%)	1(1.3%)	0
Maryland no. 1 N=14	6(42.8%)	0	7(50.0%)	0	0	1(7.1%)	0
Maryland no. 2 N=116	18(15.5%)	54(46.5%)	25(21.5%)	13(11.2%)	2(1.7%)	2(1.7%)	2(1.7%)
Wisconsin N=77	21(27.2%)	8(10.3%)	14(18.1%)	3(3.8%)	22(28.4%)	0	9(11.6%)

fifty-three (69.7 percent) were married, 67 (18.6 percent) were single, 13 (3.6 percent) were separated, and 13 (3.6 percent) were divorced. Two hundred and fifty-eight (71.6 percent) had children. Table 2 summarizes descriptive data pertinent to the study sample.

Survey Results

Participants were asked if they had supervisory responsibility, and 191 (53 percent) answered in the affirmative. To a question on feeling "burned out," 82 (22.7 percent) reported that they were feeling burned out. When asked if they believed in the burnout phenomenon, only 19 (5.2 percent) answered "no." One hundred and twenty-three (34.1 percent) reported having been involved in a multicasualty incident (10 or more victims).

The two most important questions on the survey, from the author's viewpoint, were (a) whether the participants had personally experienced psychological and/or physical symptoms as a result of their work in emergency situations and (b) whether they believed that psychological debriefings were necessary after a major incident. *Three hundred and thirteen (86.9 percent) of the participants stated that they had been emotionally and physically affected by their work at one or more emergency events. Three hundred and thirty-six (93.3 percent) felt that psychological debriefings were necessary after a major emergency event and would be personally helpful to them.* Summaries of the data by group are presented in tables 3 and 4 below.

Recommendations

The survey data shown above, although limited by the usual drawbacks of survey information, are at least helpful in pointing out the potentially great number of emergency workers (86.9 percent in this study) who may be affected by the traumatic events associated with their work. The very high belief (93.3 percent of the respondents) in the need for psychological debriefings after major events urges system administrators and mental health professionals alike to quickly develop, disseminate, and evaluate specialized programs to assist those who are often the hidden victims of catastrophic events—the emergency personnel.

Special teams of well-trained mental health professionals should be developed in the larger population centers of the nation, and these teams should work in concert with emergency personnel who share in the responsibility of assuring adequate mental health services in the form of psychological debriefings and short- and long-term therapy. Where teams are not available, mutual aid agreements between jurisdictions or a team organized and supported by a Federal agency may be an alternative. These debriefing teams, which might be called "Emergency Services Support Units"

Table 2. Descriptive data summary by State

Participant group	Average years service	Career	Vol.	Both C&V	Avg. age	Male	Female	Married	Single	Div.	Sep.	Wid.	Have children
Connecticut instructor N=42	12.6	21 50%	11 25%	10 23%	44.2	31 73.8%	11 26.1%	25 59.5%	7 16.6%	9 21.4%	1 2.3%	0	29 69.0%
EMS N=37	12.3	13 35.1%	19 51.3%	5 13.5%	40.0	15 40.5%	22 59.4%	27 72%	7 18.9%	3 8.1%	0	0	26 70.2%
Illinois N=74	15.6	71 95.9%	2 2.7%	1 1.3%	40.8	72 97%	2 2.7%	65 87%	1 1.3%	6 8.1%	2 2.7%	0	66 89.1%
Maryland no. 1 N=14	11.5	12 85.7%	1 7.1%	1 7.1%	32.7	12 85%	2 15%	9 64.2%	4 28.5%	0	1 7.1%	0	7 50%
Maryland no. 2 N=116	11.3	49 42%	40 34.4%	27 23.2%	33.6	98 84.4%	18 15.5%	72 62%	33 28.4%	3 2.5%	8 6.8%	1 1.8%	73 62.9%
Wisconsin N=77	12.6	49 63.6%	20 25%	8 10.3%	37.1	40 51.9%	37 48%	53 68.8%	15 19.4%	7 9.0%	1 1.2%	1 1.2%	57 74.0%

Table 3. Numerical and percentage breakdown by groups of those reporting being personally affected by one or more emergency situations

Participant group	Number reporting
Connecticut instructor, N=42	31 (73.8%)
EMS, N=37	32 (86%)
Illinois, N=74	65 (87.7%)
Maryland no. 1, N=14	12 (85.7%)
Maryland no. 2, N=116	103 (88.7%)
Wisconsin, N=77	70 (90.9%)

or "Critical Incident Stress Debriefing Teams," would be made up of fire, police, emergency medical, and psychosocial personnel who would be aware of major incidents (described earlier) that might need to be debriefed. The teams could respond to the scene, should that be necessary, and provide onsite emergency mental health consultation to the commanders of field units as well as crisis intervention and emotional support to emergency workers. Onsite consultation would occur far less frequently, however, than the other services of such a team.

In the majority of cases, the Emergency Services Support Unit should be brought into action in the days or weeks following any critical incident that has sufficient emotional power to cause overwhelming emotional reactions in emergency personnel. Group debriefings or individual short-term therapy should be provided ideally 24 to 72 hours after the impact of a critical incident or at any time thereafter when it appears most appropriate.

An Emergency Services Support Unit also can serve several other roles including followup at 30-, 60-, or 90-day intervals and also at the first anniversary of a major traumatic incident. The provision of education regarding stress and crisis can also be a function of the Emergency Services Support Unit. Much of the material provided in educational programs may have a preventive value for emergency personnel and may mitigate the effects of critical incidents on them.

Team members need to be carefully selected. Work on an Emergency Services Support Unit or a Critical Incident Stress Debriefing Team is strenuous, and many emergency personnel and clinicians are unsuitable for it. Emergency personnel who are chosen should have the respect of their fellow workers and should be mature, stable, sensitive individuals who are able to maintain an extremely high degree of confidentiality. Many emergency service

Table 4. Numerical and percentage breakdown by group of those expressing a belief that psychological debriefings would be personally helpful to them after a major incident

Participant group	Number expressing belief in debriefings
Connecticut instructor, N=42	41 (97.6%)
EMS, N=37	34 (91.8%)
Illinois, N=74	62 (83.7%)
Maryland no. 1, N=14	14 (100.0%)
Maryland no. 2, N=116	110 (94.8%)
Wisconsin, N=77	75 (97.4%)

team members can be trained to provide crisis intervention for their fellow workers until a debriefing session can be organized by a mental health professional. In some cases, a certain team member from the emergency services area may become so proficient as to serve as a cotherapist with the clinician.

Clinicians who serve on the team must be active in their approach. The traditional Freudian or Rogerian styles are usually a turnoff for emergency personnel. What is necessary is a therapist with a directive style who is also very supportive in his or her approach. The therapist should be well versed in crisis intervention theory and should be experienced with the crisis intervention approach to therapy. A clinician with an understanding of stress and particularly of posttraumatic stress disorder is essential. Clinicians should also be experienced in group process and should have a thorough knowledge of human communication processes. Those who serve on the team should be cross-trained in emergency operations and disaster psychology. They should be willing to ride along occasionally with emergency workers in order to gain an understanding not only of their personalities but of the type of work they do.

Conclusion

Events like the San Diego air disaster and the collapse of the Hyatt Regency Hotel in Kansas City need not be meaningless and empty losses. They have dramatically opened our eyes to the devastating stresses that invade the lives of emergency personnel. Perhaps before it becomes too late, we can realize that it is unnecessary for emergency personnel to tolerate the heartbreak and hassles of their work without alleviation and support. The development of Critical Incident Stress Debriefing Teams may provide sufficient support to emergency personnel to counter the aftershocks of work that causes disruption in their lives and a threat to their mental and physical health.

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A Disaster Worker's Response

David L. Eby, M.S.W.

Introduction

I would like to thank Dr. Mitchell for his valuable review of research and for his work in developing a debriefing program for critical incident responders. In addition I congratulate him on his writing skills—his ability to express complex concepts in clear, concise, simple language and in a logical progression.

As a Red Cross administrator, I have never responded to or been involved in a critical incident, and my disaster experience has been limited primarily to large-scale events receiving Presidential declarations. However, as I talked with Dr. Mitchell, studied his paper, and talked with other Red Cross disaster staff, I became aware of the relevance of his paper not only to the Red Cross, but also to FEMA and other voluntary agencies active in disaser. Therefore, I will address my remarks both to the critical incident, which involves the emergency worker for a relatively brief period, and to the large, national disaster, which involves the disaster worker in a recovery effort that lasts from several weeks to several months.

Many Red Cross chapters in large metropolitan areas have Disaster Action Teams (DAT) composed of trained volunteers who are oncall 24 hours a day. Their responsibility is to respond to natural and manmade disasters involving one or more families and to provide emergency housing, clothing, and other essentials to the survivors. Followup casework services and financial assistance are provided by other experienced chapter staff members once the survivor's situation has been stabilized. Several chapter directors I talked with have observed the same symptoms mentioned by Dr. Mitchell in both the DAT volunteers, who are exposed to many of the same emotional events as the emergency worker, and the chapter staff members who provide casework services to a family that has been affected by a death or severe injury. A few chapters have begun to develop debriefing programs for the DAT volunteers and casework staff and have implemented procedures to control the number of critical cases handled by any one caseworker. Dr. Mitchell's work will be of immense help to our major chapters in their efforts to alleviate the effects of stress on our volunteers and workers.

Additional Stressors for Disaster Workers

In addition to the factors Dr. Mitchell mentioned that cause stress to workers, a number of others, particularly with regard to major disasters, come to my mind. I would like to delineate them before discussing psychological help for the worker. The factors come from my own experience as well as from reports to me by other disaster workers.

Changes in the procedure that workers have been trained to follow in responding to a major disaster is one cause of stress. Sometimes such change originates from other agencies. When FEMA changes its approach or comes out with new programs or regulations, it also affects the workers who have to change their actions to achieve an integrated disaster response system. Actually, any change in normal procedures will cause stress, both to administrators and to workers.

The client's culture and the client's language can also be a source of stress to the disaster worker. If a staff member from New York, for instance, is placed in Appalachia, he or she experiences a type of culture shock. We have, on some disasters, provided a cultural orientation for workers entering an area where the culture is substantially different. Language can be a factor, as well. If a caseworker who is trying to deal directly with a family has to talk through an interpreter, he or she wonders if the interpreter is saying what was intended and also reporting correctly what the disaster survivor is saying back. A survivor may talk for 5 minutes, and the interpreter may turn and say, "They say they don't want help." It leaves the worker with real questions about the intended messages.

The climate in disaster areas can be a stress factor when it involves a drastic change for the worker. On a disaster assignment in Puerto Rico in November, I was drenched with sweat at 9 o'clock in the morning because of the humidity and heat. I had just come from Washington, DC, where the weather was much cooler.

Unfamiliarity with new roles is also a difficulty. Often in disaster operations, workers must react quickly to new developments and with no time to bring in a person with specialized experience to fill a specific role. Staff members from within are promoted to fill the need. When individuals assume new roles for which they haven't been trained or prepared, they experience a high degree of stress. Similarly, when several major disasters occur at one time, the staff is stretched thin, and people are promoted beyond their training and experience. This can be a very stressful situation.

The working environment in which the workers as well as the supervisors and the administrative staff find themselves can be a source of stress. At one disaster site I visited, an extremely small room held approximately 15 administrative staff members directing the operation. I learned from the family service officer that she had to work beneath a table. She took her phone there so she could hear what the person on the other end of the line was saying. While this is amusing at one level, it was extremely stressful to that individual.

The availability of lodging and community support services is also important. Sometimes disaster workers find themselves in an area with no motel, and they have to sleep in a car or in a shelter. The electricity may be out. They may find they can't have a meal in a restaurant because all the restaurants are closed, and instead they have to eat sandwiches off of a truck. Sometimes workers go all day without eating. They leave in the morning before breakfast is served, and the only meal they get is when they come back that night. All these situations are quite stressful.

The length of the working day and the length of the assignment can present difficulties. For example, for the first 2 weeks in major disasters, Red Cross staff members, both administrative and direct workers, put in 12- to 14-hour days. After the second week, they get off a half day. Individuals who are on a disaster assignment for 2 or 3 months may get 1 day off after the third week. This can be a significant stressor for workers, and productivity can begin to decrease.

Community acceptance of the worker and the worker's agency is another factor that can cause stress and strain. In the 1977 floods in Appalachia, Housing and Urban Development (HUD) workers were trying to set up a temporary housing program. They were in an impossible position, however, because no alternate housing was available, and they had to bring in mobile homes from outside the affected area. This took a long time. Then they had to find a mobile home lot outside the floodplain. They were forced to relocate families a significant distance from their community, and resentment by individuals toward HUD grew. Some of the HUD workers approached us and asked for our Red Cross I.D. jackets so that they could enter the area and not be afraid for their lives. A similar situation arises when the Red Cross is in a disaster area and we're perceived as not being helpful. In a number of instances, demonstrations or riots have occurred. We try to find out what the problem is and address it, but we are not accepted in some communities.

The role perception of the worker as well as client expectations are important. When workers have not been briefed properly or have not accepted the correct role, real problems are created when they are confronted with the agency's regulations, procedures, and constraints. The same holds true for the disaster victim or survivor of a critical incident. Often, survivors have high expectations and expect their lives to be put back together very quickly, and that does not happen.

Unusual disasters also are a source of stress. For example, Mt. Saint Helens or Three Mile Island, where the workers had not had a similar experience or had not been prepared for the unusual effects of the disaster, were particularly difficult.

Finally, *political factors* can promote stress. In trying to do the best for their community, mayors and local political leaders can actually create additional stress for the survivor. For example, a mayor who raises funds for disaster victims may delay disaster assistance since by definition Red Cross and Federal resources are available only after local resources have been exhausted. On the other hand, if that mayor were to collect contributions during the assistance and hold them so that they could be used in case people were still in need following those efforts, the help would not be delayed. Likewise, bond issues and other formal fundraising efforts may mitigate against some assistance programs and delay help. These situations are frustrating to disaster workers who are ready and able to help.

Psychological Help for the Worker

"Healing the Helper" provides the practitioner with an excellent overview of the research conducted to date on emergency worker stress. Of particular interest is the symptomatology, both physical and emotional, that Dr. Mitchell has depicted. What once may have been overlooked as unavoidable, occupational side effects can now be recognized and addressed appropriately. His recommendation for establishing Emergency Services Support Units deserves immediate review and support by public and private agencies active in emergency and disaster response programs.

Dr. Mitchell is to be commended for conducting and reporting the results of his survey. As he notes, there are limitations in generalizing from this data; however, he has pointed the way to needed research. One surprising statistic was the high percentage (86.9 percent) of individuals who had been emotionally and physically affected by one or more events over an extended period of time—12.6 years was found to be the average time of service. In light of the physical and psychological effects noted in Dr. Mitchell's paper, the emergency worker seems to be at high risk for physical and emotional problems. While more research may be needed to confirm this, regular medical exams for early identification and treatment of physical problems and the use of his stress debriefing program to alleviate the emotional impact and identify those workers in need of therapy are obvious program needs. Indeed, the high percentage of workers who reported psychological or physical symptoms raised the question of who is affected more, the survivors of a critical incident or the emergency workers?

Other factors mentioned in Dr. Mitchell's paper that should be identified for further discussion and research are as follows:

1. Administrators, supervisors, dispatchers, and other support personnel should be included in research along with the

frontline emergency worker. Without seeing the base data, it is difficult to determine what these groups reported; however, probably a person does not need to be at the scene of the critical incident to be affected. Additional research is also needed to determine the various agency populations affected by a critical incident so that they may be included in a debriefing and followup program.

2. Since the symptomatology includes nightmares, marital discord, irritability, lowered sexual appetites, and other effects related to the worker's home situation, I recommend that the immediate family members also be studied to identify their needs and supportive roles.

3. In addition to carefully screening and educating the debriefing team members, some support system will be needed for them. Dr. Mitchell states that this work is strenuous, and this has been borne out by the staff who worked for Project Cope, a community-based mental health response to the flooding and mudslides that occurred in California in January 1982.

   The Community Mental Health Services, County of Santa Cruz, California, organized Project Cope and in their report, dated April 1983, noted that the staff who were in a helping role were also vulnerable to the emotional impact of the disaster. As a result, Project Cope held regular debriefing sessions for the group leaders who had experienced feelings of inadequacy and frustration. In addition to the structured session, group leaders also found that they could debrief themselves informally with spouses, family members, or professionals involved in disaster counseling.

4. The characteristics of the emergency worker should be explored. While all are affected, some seem to be able to handle the stressors better than others—82 (22.7 percent) participants of the survey answered that they were feeling "burned out," which means that 278 (77.2 percent) were not feeling this way, even though at least 259 (93.2 percent) of the 278 believed in the burnout phenomenon. Although 313 (86.9%) of the participants responded that they had been emotionally and physically affected by their work, this means that 47 (13.1 percent) did not feel affected.

   What accounts for these differences? Perhaps some respondents were more honest or had a higher degree of self-awareness than others. It may also be that personality factors or health factors enable one person to better handle emergency work than another. Research proving this to be true would have important implications for the recruitment, education, assignment, and maintenance of emergency staff. Once an emergency worker is recruited and trained, what is the dropout rate in the first 10 years, and what percentage requires early retirement due to a stress-related problem arising from a critical incident?

5. Although the limited budgets of emergency response agencies now stand in the way of funding special programs, this factor can also be a compelling argument for retaining trained and experienced personnel, decreasing the medical expenses for both physical and psychological treatment, and lessening job dysfunction. The cost in dollars to both the emergency worker and the employer must be documented in order to obtain the funds necessary to establish and maintain an Emergency Services Support Unit network.

I could not help but apply Dr. Mitchell's findings to my own Red Cross experience on major disasters. Almost all of the stress symptoms identified in his paper are familiar to me because I have experienced them or observed them in my coworkers. While the severity may not be as great, the long-term, repeated exposure to the stressors may have a serious effect on the disaster worker. On 4 of my 11 disaster assignments I have experienced episodes of crisis. On all four of those assignments I was in a supervisory or administrative position and had little or no contact with the disaster survivor. Other disaster workers I have talked with have reported experiencing the same or a higher rate of stress and crisis. It would truly surprise me if FEMA and other voluntary agency disaster workers were affected differently.

Therefore, the same research that needs to be completed for the worker who responds to emergencies also needs to be done for the worker who responds specifically to disasters. Within Red Cross, three groups need to be studied:

1. Full-time disaster staff and volunteers at the national level who repeatedly respond to major disasters

2. Chapter staff and volunteers who continually respond to small, local disasters as well as an occasional major disaster

3. Short-term volunteers recruited for a major disaster from the affected community. These volunteers work for the Red Cross during the day and then face normal family and community responsibilities in the evening. Unfortunately, we know the least concerning this last group, the locally recruited volunteer, upon whom we depend the most and without whom we would be unable to carry out our disaster responsibility.

The Red Cross does hold an orientation for all staff and volunteers on a major disaster operation. While a portion of this orientation is devoted to a discussion of stress and how to alleviate it, I do not feel, in light of Dr. Mitchell's work, that it is adequate. We need to conduct the necessary research, identify the nature and scope of our problems, and develop training and supportive programs to retain our staff and volunteers and increase their effectiveness. The same probably holds true for FEMA, the Small Business Administration, and other organizations, both public and private, who respond to the needs of their neighbors in an emergency or disaster situation. Again, I thank Dr. Mitchell for his work and hope that the American Red Cross, along with NIMH and FEMA, wil be instrumental in developing a national network of Emergency Services Support Units.

6. Prevention of Stress

Christine M. Dunning, Ph.D.

Recognition is growing that disaster workers--police officers, firefighters, emergency medical personnel, utility workers, and responding military units--must come to terms with the stresses they experience during disasters involving immense human suffering. Emergency response agencies have found both immediate and delayed organizational dysfunction as a result of physiological and psychological reactions among those assigned to scenes of disaster. While researchers and psychologists who specialize in job stress generally agree that those attracted to emergency work as a group are more emotionally stable than the general population, and are less likely than the ordinary citizen to crack under intense pressure, emergency workers are subject to an increased incidence of diseases of adaptation (Dunning and Silva 1980). The experience of emergency agencies suggests that more careful consideration needs to be given to ameliorating the stressful impact of the emergency worker role through predisaster planning and programming commitment.

Professionals have long ignored the needs of persons who act as emergency workers, despite postdisaster occurrences of physical or psychological/behavioral disorders (Raphael 1975, p. 118). Research exploring the psychological aftermath of disaster situations indicates that manifestations of trauma can be found in actors other than victims, survivors, and their relatives and close friends. While not explicitly focusing on emergency workers, studies exploring psychic impairment of disaster survivors have found stress reactions in persons who, by virtue of their professions, are responsible for problem resolution and decisionmaking in crisis situations. Furthermore, Killian (1952, p. 311) reported a traumatic aftermath, similar to that of survivors, in police officers, firefighters, and public utility workers following the Texas City oil port explosion in 1947, in which rescue personnel responded to the subsequent fire and evacuation of victims. Emergency workers reported dilemmas about staying on the job or seeing to the welfare of family and friends. While persons not assigned to the disaster generally responded to the dilemma in favor of loyalty to family and friendship groups, emergency workers remained on the job. Later interviews, however, revealed feelings of guilt and failure.

Workers also reported being torn between the desire to play the heroic role of rescuer and carrying out more routine occupational tasks. Killian (1952, p. 312) further related the experience of an Oklahoma State patrolman whose duty it was to reach outside help after a tornado. The patrolman felt that driving by and not stopping to help those people who were looking to him as a friend was one of the hardest things he ever had to do.

A similar condition was found by Krell (1974, p. 56) in hospital disaster support teams assisting relatives of air crash victims. A number of staff members experienced grief reactions. Fatigue, reluctance to be relieved from duty, even for a short break, and resistance to turning victims' families over to a colleague were common. Short-term reactions of the nursing and social work staff included severe depression with periods of crying, migraine headaches, withdrawal from social activities, and irritation with trivial activities.

Davidson (1979, p. 21) reported that San Diego police officers who responded to an air collision between a Boeing 727 and a Cessna 172 on September 28, 1978, experienced serious sleep disturbances, nightmares, loss of appetite, perceived reduction in libido, and, in many cases, anger and hostility often directed toward inappropriate targets. Symptoms experienced by police officers included such stress-related disorders as preoccupation with the events of the rescue, heart attack symptoms, migraine headaches, stomachaches, colitis, muscular aches in the back and neck, episodes of heavy perspiration accompanied by unspecific anxiety, and psychologically linked skin disorders. Similar reactions were self-reported by Chicago police officers who were deployed at the air crash of Flight 191 on May 25, 1979. At debrief sessions held shortly after the rescue effort, police officers indicated frustrations with their role in the recovery, both in terms of organizational expectation and of professional and personal competence. Reduced cooperation, acts perceived as desecration of human life, incidents of sabotage, and personal attempts to secure employment in other fields were common immediate reactions. Insomnia, nightmares, and flashbacks to previous incidents such as the Illinois Central Commuter train and El crashes, Vietnam experiences, and school fires were frequently mentioned as being experienced by the officers involved.

Predisaster Program Planning

Programming directed at resolving the grief and stress reactions of survivors and the close family of victims of disaster are a relatively new phenomenon, generally provided through the voluntary efforts of local medical and mental health services. Attempts to introduce such programming as a component of comprehensive plans for disaster response are even more recent and rare. The provision of services and appropriation of resources for such an ancillary service, for the admittedly budgetarily devastating occasion of disaster, tends to be lost in any planning effort. When it is considered, the focus of providing services rarely extends to emergency workers, whose training in disaster response is seen as sufficient for the job. Yet, if we consider mental health as the ability to cope with crisis and handle unpredictable stress, maintaining mental health becomes a requisite for effective behavior in disaster (Williams 1958). Organizations responsible for supervising emergency workers must address the potential for the disruption of support services during disaster situations caused by worker trauma (Diskin et al. 1977). The possibility of a delayed reaction, which can cause reduced job effectiveness subsequent to the event, points to the need to explore programming responses and develop formal departmental commitment to resolving such difficulties.

The prevailing attitude of the public and those persons responsible for supervising disaster emergency workers is exemplified in the comments of Dr. Robert L. Wick, medical director of American Airlines, following the American Airlines Flight 191 crash of May 25, 1979. According to him,

> these are professionals—from the sheriff, police, ambulance crew, and so forth. They've seen it all before...this is what they are trained to do. If any of them need help dealing with a situation such as this, perhaps the worker really is not suited for this type of job (Staver 1979).

Such an attitude disregards the fact that persons, even those in emergency-oriented professions, are still greatly influenced by disaster. The assumption that present training programs, such as those for the police, the military, and hospital personnel, impart skills to prevent trauma is unsubstantiated. Furthermore, recent research on the incidence of stress-related disease experienced by police officers suggests that the police, among other professions, do not become immune to the negative or distasteful responsibilities of their occupation. The assumption that emergency personnel are not affected by the circumstances in which they work is disproved by what little research does exist (National Institute for Occupational Safety and Health 1974, p. 156).

In addition, it is irresponsible to assume that selection and training are adequate to prevent stress and its manifestations, since the only logical course of action for those in emergency professions who experience trauma would be job severance. The prevailing sentiment, both in and out of the profession, is that "if you can't take the heat, get out of the kitchen." Such a stance precludes the opportunity for the research and development of screening, training, and support programs to forestall the negative consequences of disaster in those persons who can least afford during an incident to be so affected. While some have argued that in a well-prepared population, the usual consequences of disaster are short-term jitters and that pathological anxiety states are not likely to occur (Wilson 1962, p. 128), emergency workers whose complex roles involve instantaneous decisionmaking in ambiguous or life-and-death situations, requiring clear perceptions, emotional stability, and level-headed judgments, cannot afford to be negatively affected by stress during or subsequent to the disaster incident.

In retrospect, we know very little about the long-term effects of disaster on mental and physical health and behavior. There is no reason to think that disaster promotes only dramatic change such as a nervous breakdown and then only in those who are inherently weak. The enduring quality of disaster stress suggests more careful consideration of its covert consequences.

Indeed, researchers have found it easier to conduct studies of the intimate matters of emotional well-being during periods of disaster than at times of normality (Wilson 1962). The need for further research into disaster trauma of emergency workers appears to be indicated. Consideration should be given to the effect of crisis on emergency workers and to worker selection and training. The implementation of trauma programming under official sanction involves formal acknowledgment not only of the possible consequences of a particular incident, but also responsibility for mitigating any negative manifestations. Disaster trauma program response should not be an afterthought to the disaster plan of the emergency organization, but should be incorporated as an integral component to the total disaster effort.

Issues in the Provision of Rescue Services

Role Conflict

Initial research into the development of disaster-response plans has indicated the need to focus on disaster efforts that produce role conflict. People in a disaster situation who face the choice between loyalty to the family or a more general sense of altruism to the community suffer the dilemma of role conflict (Killian 1952, p. 311). Separation anxiety strikes many who must make such a choice. The general reaction is to quickly resolve this conflict in favor of loyalty first to the family or other intimates and then to more impersonal social groups. For those people who have clearly defined responsibilities in the disaster, the conflict often persists and causes profound psychological consequences (Laube 1975). Studies of conflicting group loyalties and contradictory roles resulting from this type of dilemma have shown that emergency workers in disasters opted to remain at their posts even when loved ones were threatened by the disaster (Killian 1952, p. 312).

The police, firefighters, and other emergency workers are in fact expected to turn from their families, who may or may not be physically safe, to perform their community roles. The decision to follow the role of police officer or emergency worker may involve a difficult moral struggle or be automatic, but its aftermath has not been adequately researched. Officers and fire personnel have reported anger at the department for the expectation that they forego attempts to determine the safety and condition of loved ones; supposedly, attempts to do so would be disruptive to the organizational response to the disaster. Administrators reason that the need to deploy personnel according to task, and the overburdened communication system utilized in the command response to disaster, does not allow even the most hasty attempt to make physical or telephone contact with one's family. In addition, any desertion of duty assignment to physically locate one's family and ascertain its safety and well-being results in formal disciplinary action. Obviously, the occurrence of natural (e.g., tornado, flood, hurricane) as opposed to manmade (e.g., air crash, train derailment, restaurant fire) disaster would affect the level of role conflict, since the devastating effects of a natural disaster would be more likely to exacerbate role demands. The role conflict engendered by the forced choice is likely to cause dissension in the family, which can further act to create stress for the emergency worker.

If the family is not endangered, it is not uncommon for the emergency worker and his or her family to be inundated with queries by neighbors, friends, and relatives concerning the incident. The worker simultaneously has to deal with personally resolving feelings of hopelessness, futility, and needlessness and is at the same time called upon to make the disaster a source of entertainment or mark of prestige by virtue of involvement. The family often demands information for its own benefit, to quell fears or to meet the requests of others, even when the emergency worker may not yet be psychologically prepared to give it.

In addition, emergency workers assigned to outer perimeter tasks report feelings of being unhelpful, left out, and ineffective. These workers may make unauthorized visits to the inner perimeter in order to witness the event and be able to report a more involved role. They often do not see how their contribution in crowd and traffic control, site security, and scene preservation are integral tasks for disaster resolution. Deployment in outer perimeter assignments exclusively often produces role conflict in those emergency workers who are essentially action oriented.

Furthermore, role conflict exists in occupations where the predominant focus of training is on rescue. Rescue connotes a sense of hope. Workers expect that their skills, with prompt action, will be used to free or save human beings from imminent danger. It implies that through their efforts, rescue workers will release persons from suffering or at least preserve their continued existence. Yet in most disaster situations—air crash, fire, and building collapse—there is no hope. Information available before the rescue response usually indicates that finding survivors is unlikely. Operations essentially involve an evacuation of objects as opposed to a rescue of persons (Associated Press 1981; United Press International 1981). There is no need for rescue skills such as first aid, emergency medical treatment, crisis intervention, physical release, or psychological support. There is no sense of heroic purpose to what is done onsite.

Confronted with the crisis situation, emergency workers have few physical or psychological buffers against the horror of the situation. Personal functioning under these circumstances would certainly be expected to become impaired unless emergency workers developed defenses to allow at least minimal levels of performance. It is not unusual for emergency workers to assume a demeanor when evacuating the dead that might be construed as disrespectful of human life or even as an act of desecration. The same macabre humor and seemingly irreverent behavior common among medical students involved in their first dissection course can emerge in a stressful disaster situation. Unless such behavior is understood by the employing organization—including incidents of souvenir collecting, unauthorized site convergence, and obsessive involvement in the disaster response effort—inappropriate disciplinary action or response dysfunction may result. When people see a purpose for their actions, they can deal more effectively not only with the disaster reality, but with other ancillary issues that arise from it.

Disaster Rescue Planning and Training

Disasters occur infrequently. It is not uncommon for most emergency personnel to never experience disaster's sudden and great misfortune. Disaster implies an unforeseen mischance bringing with it destruction of life and/or property. Given the day-to-day demand for services made upon those occupations with a role in disaster response, it is not unusual that little or no training or information may have been provided prior to the event. Essentially, skills necessary for evacuation, excavation, and recovery are learned on the job and generally adapted from incidents of occasional experience. Often, since tasks and their allocations are not clearly defined, it is common for emergency workers to feel frustration and incompetence when demands for performance are made of them.

Many critics of the manner in which emergency workers respond to a disaster do not realize that such an occurrence may happen once, twice, or three times in a career. Since the event is time-limited, there may be no time to select or perform the best technique necessary to sustain the least physical damage to person or property. Given the demand for immediate resolution, the emergency worker has no time to become accustomed to the situation so as to allow carefully planned and executed emergency behavior.

That efforts are hurried, ill-conceived, and often unsuccessful adds to the guilt experienced by emergency personnel. One common reaction centers around the feeling that the emergency organization had no responsibility for responding to the situation and/or performing the assigned tasks at the site. The rejection of responsibility for assigned tasks that are new to the worker further impairs the short-term performance of the emergency agency.

Prior training programs and on-the-job experience do not always impart the skill and knowledge necessary to workers in a disaster. This has caused many emergency workers to question their appropriate roles in the crisis situation. Lines of authority and responsibility are often unclear, at least to the worker, as the infrequent or unique nature of disaster does not result in clear communication within and between organizations. Disaster plans typically focus on initial response arrangements, allocation of command responsibilities, and resource procurement. However, the overall game plan of the disaster effort is generally not available to the line worker. This situation leads to frustration and irritation on the part of the worker, who sees the need for a more vigorous effort or a more organized approach than that generally seen onsite.

The innate need to rush in and "do something" or the perceived futility of techniques utilized has caused many workers to question the decisions of those in command. Despite the best developed plans, emergency workers are unaccustomed to the multiorganizational effort required in a disaster situation and have occasionally rejected the command role assumed by an unfamiliar outside agency. If the disaster involves a cooperative effort with the organization seen to be at fault in the incident, such as in a technological disaster, the issue of blame and the very human desire for retribution has acted to impair worker performance. For example, the expression of feelings of blame and demand for repayment hampered the cooperative effort necessary for identifying victims of the Flight 191 crash in members of the Chicago Police Department, Cook County Medical Examiner's Office, and American Airlines.

Professional and Occupational Expectations

People who select emergency occupations such as law enforcement, firefighting, and emergency medical treatment are generally less likely than the general population to seek help when they have trouble coping (Blackmore 1978). This is in part because their departments have been traditionally reluctant to acknowledge that their personnel suffered from personal problems that might be job related. If a member of the department had a problem, a curtain of secrecy and denial was pulled down around it. Since these persons assumed responsibility for the protection and crisis resolution of others, they weren't supposed to have problems of their own. It has only been recently that these organizations have assumed formal responsibility for the treatment and resolution of stress-related medical, psychological, and behavioral problems of their employees.

There is also a concomitant belief among emergency workers that their colleagues, upon whom they depend for support and their very lives, should not experience or recognize such problems (Kroes et al. 1974; Morris and Newhall 1981). When problems do occur, often the emergency worker and peers perceive their incidence to be a reflection of incompetence or failing in the situation. The decision to seek assistance for problem resolution on one's own is seen as a professional failure, a personal weakness, and an indication of questionable future ability to perform one's job. Official, formal recognition that problems do result as a consequence of disaster can help to facilitate successful intervention and hasten recovery for those emergency workers affected.

Emergency occupation groups have been linked with high incidences of potentially debilitating conditions, thus suggesting the desirability of research and planning for this result of disaster. It has been pointed out in studies conducted by the National Institute of Occupational Safety and Health (NIOSH) that certain emergency occupations, for example the police, involve high stress, making them a definite risk population for diseases of adaptation (Kroes 1976). The research found that police officers experience stress-precipitated diseases at a higher rate than the general population (Blackmore 1978, p. 47). Of the 20,000 officers in 29 police departments studied, 36 percent reported serious health problems, 23 percent had serious alcohol problems, 37 percent reported serious marital problems, and 20 percent had problems with drugs. Other studies have concluded that police officers have a high rate of heart disease and stomach disorders (National Institute for Occupational Safety and Health 1975, p. 73). In addition, their divorce rates are nearly twice as high as other occupation groups, and preliminary findings indicate that their suicide rates are an estimated two to six times the national average (Kroes et al. 1974). Given the cumulative nature of stress, the onset of a disaster could well prove the trigger to a stress reaction.

Programming Recommendations

Killian (1952, p. 314) suggests that training or a feeling of responsibility may predispose the individual to adhere to secondary group demands, even in the event of disaster. The activities of individuals, especially emergency workers, are guided by both formal and informal normative structures during disasters (Drabek 1968, p. 143). While specific disaster task roles are available to emergency workers such as police or fire personnel, initial responses to emergencies involving large amounts of coping behavior, i.e., efforts to modify and adapt intraorganizational and interorganizational relationships to meet disaster conditions more effectively, may not be so readily available.

An examination of cases in which organizations did manage to function or recover quickly suggests two kinds of support mechanisms (Fritz 1961, p. 651). The first operates to give organizational roles priority in cases of conflict and involves the following:

a. Training members to give first priority to the job and not the family (Killian 1952)

b. Making organizational personnel visible so that clients and community members exert pressure on them to stay on the job (Killian 1952; Marks and Fritz 1954, p. 12)

c. Instilling a degree of primary group loyalty among organization members (Killian 1952).

The second mechanism operates to avoid conflict between family and organizational responsibility and entails the following:

a. Having a significant proportion of organizational members recruited from outside the local area (such as use of State police or National Guard)

b. Having a significant proportion of organizational members without close family ties

c. Giving information to organizational members about scope of impact (localized or extensive)

d. Having rapid communication with home available, to reassure members whose families are safe (Form and Rosow 1958, p. 156).

Emergency-response organizations must decide whether to expend more effort preparing workers to deal with disaster at a more personal level or in planning and implementing a counseling system for disaster trauma. Organizations that recognize their role and responsibility for these functions assume responsibility for employee assistance programming without jeopardizing job assignments or promotional opportunities for their personnel.

Stress can increase over time and may not become apparent until long after the disaster situation. Initially, emergency agencies can focus on conditions that affect job functioning. However, stress can also result in such reactions as behavioral, alcohol, drug, marital, and medical problems that may or may not approach crisis. In addition, behavioral or emotional stress reactions may be delayed. Since they occur long after the disaster incident, generally on an anniversary of its occurrence or subsequent to a call for service involving similar cues, the dysfunction may not be linked to that event. Whether psychological imbalance or physical disease is debilitating or not, we can still focus on the organization's responsibility to provide a remedy for disaster trauma in its personnel.

Galdston (1958) points out the importance of open communication in the period immediately following massive stress. Communication networks are a means of humanizing disaster in that they provide meaningful experience for the individual and serve to prevent mental health problems. Given the nature of emergency work, the opportunity to ventilate is neither structurally nor normatively encouraged nor always possible. The demands of the occupation, which require workers to respond to situations individually or in groups numbering less than four or five, does not allow the workers of the disaster to aggregate and discuss what they have witnessed or done. In addition, communication other than the transmission of fact is discouraged as being indicative of professional incompetence or personal weakness.

Given these considerations, the opportunity to communicate must be structured by the rescue organization. Official sanctioning of the activity indicates the responsibility of the department for the demands placed on workers and also acts to facilitate the therapeutic process if subsequently necessary. The Chicago Police Department's approach to forestalling the negative consequences of disaster trauma (the rescue following the American Airlines DC-10 crash on May 25, 1979) demonstrated administrative responsibility for deploying human beings in a disaster situation (Dunning and Silva 1980). The department conducted a voluntary debriefing program for police officers who had air crash assignments (Wagner 1979, 1980), and the immediate benefit of the sessions was higher morale. Of the 524 officers involved, 139 attended discussion group sessions led by professional therapists in which they were encouraged to discuss their assignments and experiences during the rescue. While the general initial reaction of the officers was that talking was useless, a number of officers reported that the air crash triggered memories of other stressful situations encountered during their careers.

The debrief approach seems to work better than offering medical and/or mental health services to emergency workers. While such services are necessary and beneficial, as evidenced by the experience of Davidson (1979, p. 20) in San Diego, the fact that only 38 of the 80 police officers involved in working the inner perimeter crash site in San Diego sought psychological counseling suggests that not all workers needing assistance might have been reached. While the volunteered services of San Diego area therapists was significantly more programming than is generally offered, the lack of official department sanction, as well as the occupational impediments to receiving such services, might cause those who would benefit to be unserved.

The debrief approach couples both official department sanction with implied organizational responsibility and considerations of occupational resistance. The term debrief is readily understood by those with military knowledge and experience. It is accepted as an appropriate departmental response to a unique or major situation, where the need to collect information from various actors about the response and to disseminate assessment decisions is seen as legitimate by the workers. Incorporating medical and mental health personnel into the communication process can be readily accomplished.

While we assume that the healthier an individual is under normal conditions, the healthier he is likely to be under disaster conditions, the fact that some trauma is likely to result from a disaster event implies a responsibility for that deleterious impact. Rather than projecting the standard that no failing is acceptable, organizations in their debriefing sessions can indicate the formal realization that some effect is possible and indeed normal. The department can go further and offer therapy through its counseling office or through some other arrangement, should any symptoms of trauma be experienced. The debriefing sessions serve both as a communication and education function, informing the emergency worker as to the possible deleterious consequences of disaster and the availability, in the department, of a therapeutic resource.

The debrief encompasses two considerations for disaster coping needs. First, the opportunity for emergency workers to talk about their experiences and reactions utilizes Galdston's (1958) process of communicating to either prevent symptoms or to minimize the intensity of the reaction if it does occur. Secondly, it allows the emergency worker and his or her employing organization the opportunity to learn that stress reactions are inevitable. Recognizing this, the organization provides resources so that stress reactions can be dealt with more comfortably. In addition, combining the affective and cognitive aspects of disaster response communicates to the organization some of the underlying reasons for incidences of worker or agency malfunction, with the opportunity to seek nondisciplinary resolutions. Information and ideas generated in the debriefing sessions can facilitate revision of standard operating procedures or the generation of new general orders to enhance future disaster response. Such was the case in Chicago, where command personnel utilized information presented in the debrief to write new general orders for dissemination at all levels of the department. In addition, the graphics/media unit of the department produced a short film depicting the affective as well as functional response of Chicago officers in the disaster of Flight 191.

Conclusion

Severe emotional impairment is not usually a general response to disaster. Research based on retrospective accounts does indicate, though, that at a minimum, the majority of victims suffer increased psychological discomfort characterized by anxiety, nervousness, and somatic complaints (Gleser et al. 1978, p. 209). While disruptions in interpersonal relationships were not frequent, inappropriate behavioral responses were noted.

Most people involved in a disaster do not seek professional mental health assistance voluntarily. Yet the sensitive nature of occupational responsibilities of emergency workers suggests the need to develop a therapeutic response to cover all employees involved, in order to forestall even mild debilitation affecting work performance immediately after and subsequent to the disaster. Officer Eddie Brown of the Boston Police Department echoed the sentiments of many officers when he stated that policemen don't seek help, or at least outside help; they only get worse (Blackmore 1978, p. 50).

Programs that provide for prevention of stress manifestation through early detection and treatment seem best suited for the emergency worker. Such an approach involves prior organization commitment and immediate action following disaster. Mitigating disaster trauma in workers requires that the organization assume responsibility for the provision of an informational experience and encourage communication as a means of trauma resolution. Encouraging workers to seek therapy for more severe manifestations of disaster trauma should also be a responsibility of the organization.

The few research efforts that attempt to study the effects of disaster on emergency workers suggest the need for further data collection to document the extent and type of stress manifested. The knowledge derived from such an effort would allow for the planning and implementation of comprehensive training programs and therapeutic responses for the emergency-oriented occupations. The innovative response of the Chicago Police Department, described above, indicates the need for consideration of organizational mechanisms that prevent or ameliorate stress responses in disaster workers.

Future research efforts would need to substantiate medical, psychological, and/or behavioral dysfunction in emergency workers resulting from disaster-response participation. This requires data collection on state of health and well-being before and after disaster events. Consideration should be given to issues such as the differential impact of deployment assignment, type of disaster (e.g., natural vs. technological), and other characteristics of the disaster event itself. Until we can document the potential deleterious effects of disaster on emergency workers through medical records, job performance evaluations, and self-report, it is premature to suggest which method of disaster stress prevention would be appropriate. The efforts that have been made thus far to ameliorate stress should also be examined to determine their efficacy in preventing future problems for the emergency worker and the employing agency alike.

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Response

Marge Epperson-Sebour, M.S.W., A.C.S.W.

Dr. Dunning's paper provides the rationale for preventive programming that will ensure that emergency personnel operating under highly charged, stressful, disaster situations are responding at their optimal level of functioning. My remarks expand on Dr. Dunning's work and focus on the need for developing preventive programs for emergency medical service (EMS) workers, who are daily confronted with such critical incidents as broken bodies, battered children, and physical destruction. Such preventive programs would be cost effective to (1) the organization, in terms of lower staff turnover rates and decreased absenteeism, (2) the individual worker, in terms of continued personal well-being and greater job satisfaction, and (3) to the tax-paying public, in terms of the quality of services rendered.

In her literature review, Dr. Dunning illustrated that crisis workers are first human and respond in a human, albeit professional, way to their daily encounters with devastation, pain, and suffering. To expect, and even require, that people trained to alleviate human misery should be other than human in their responses to such tragedy reflects institutional insensitivity and lack of caring.

As Dr. Dunning noted, disaster studies over the past decade have gradually begun to address the psychoemotional impact of trauma, first on victims and, in later works, on the crisis workers themselves. In their review of the existing sporadic and limited research on natural hazards, White and Hass (1975) indicated that the psychoemotional impact of disaster on victims was minimal. Later reports disproved this.

Titchener and Kapp (1976) examined the unanticipated emotional and mental health problems of victims in the Buffalo Creek (West Virginia) disaster. Robinson and Campbell (1976) addressed the need for effective, appropriate crisis intervention efforts for victims of disaster. Dr. Titchener, in his account of the Beverly Hills Supper Club fire, described the emotional experiences of the mental health professionals involved in the care of those disaster victims and their families.

Perhaps it was Calvin Frederick's (1977) work that really highlighted the need for support for crisis workers themselves. From information obtained through interviews with mental health workers in the Grand Teton Dam flood in Idaho and the Big Thompson Canyon flood in Colorado, it was evident that crisis workers needed emotional support from their peers, consultation from their supervisors, and respite from their crisis duties.

Christine Maslach (1976) studied 200 professional health and welfare service workers who were intimately and daily involved with the problems of troubled persons. Her report demonstrated that, over time, stress plays a major role in poor delivery of human services, low worker morale, increased absenteeism, and high staff turnover rate and correlates with other damaging behavior such as alcoholism, chronic depression, marital conflict, and suicide.

Based on his years of work with EMS personnel and his recent debriefing sessions with first responders to the Washington airplane disaster, the Barneveld tornado, and other catastrophic events, Dr. Jeffrey Mitchell of the University of Maryland's Emergency Health Services program confirmed that emotional stress, performance pressure, long hours of exposure to human misery, and physical exhaustion take their toll on emergency personnel (Mitchell 1974). Manifestations such as flashbacks, chronic diffuse anxiety, disrupted sleep, and withdrawal from usual social activities were common occurrences among those EMS personnel observed by Dr. Mitchell.

Emergency medical services is still a new and exciting field and seems to appeal to young, energetic people and to those who like a busy, varied, and unpredictable workday. For doctors and nurses, trauma medicine offers the opportunity to develop a variety of medical skills, with an increased responsibility for critical life/death decisionmaking. For emergency medical technicians, paramedics, and other field personnel, the work experiences offer continual professional challenges and a sense of being needed, which can provide a daily strengthening of learned skills and an enhanced self-esteem from the satisfaction of knowing that one's efforts are important to others.

Nancy Graham, a psychotraumatologist in Los Angeles whose work is paramedic training, has observed that medical workers are usually competitive, thrive on challenges, have high energy levels, and tend to spend their leisure time in active, rigorous outdoor activities (Graham 1981). If this is so, the high level of physical output required of emergency medical personnel would not be overburdensome if it were not for the added emotional demands of their jobs.

As Dr. Dunning stated, and I believe it is the key point in her paper, there is a need for institutional concern and support for the well-being of personnel. Official, formal recognition that problems do result as a consequence of disaster or critical incidents can help to facilitate successful intervention and hasten recovery for those rescue workers affected. EMS organizations can provide such recognition to this problem by having their local organizations look at how effectively they provide for stress resolution for their personnel while on the job. EMS institutions responsible for education and training programs can officially recognize the problem in at least two ways: (1) by including stress management and basic human behavior courses as an integral part of the curriculum and (2) by requiring such courses for certification.

While on duty, constant exposure to human devastation and to severely ill, battered, and traumatized patients in need of immediate care can deplete the EMS worker's psychoemotional reservoir. According to Maslach (1976), this could be replenished by an awareness of and insight into one's need for change and a temporary withdrawal from and/or diversion from work activity. EMS organizations need to support and have a formalized response to this personnel need by providing respite, a "time out" for a few hours or a day depending on the individual's need; opportunities for internal work alternatives; realistic work hours; and varied work responsibilities.

EMS organizations also need to initiate formal and informal support programs that would allow emergency workers to come together as colleagues, to share personal feelings, and to function as a mutual support group. Krystal (1974), Parad (1974), and other crisis intervention authors have confirmed that such group programs can be effective and efficient in helping to cope successfully with stress. Such group activities can foster team spirit, promote mutual understanding, and develop positive attitudes toward work.

It may be helpful to take a close look at existing programs. For the past 10 years, Baltimore's Maryland Institute for Emergency Medical Services Systems, the hub of the Maryland EMS system with a 78-bed shock/trauma center for severely injured accident victims, has been concerned about preserving the mental health of its personnel. Through its psychosocial services department, the Institute provides support programs for its clinical and field staff. Formalized, sequential workshops in problem solving, communication skills development, assertiveness training, and team building provide more *objective* and accepted ways to deal with staff feelings of inadequacy, failure, anger, and guilt as well as with the interpersonal issues arising from an interdisciplinary team approach to patient care and the general stresses and strains inherent in a challenging, complex, hectic, medical system dealing with life-and-death issues.

Debriefing sessions for staff members who have experienced unexpected, additional stress due to tragedies, such as unanticipated multiple patient deaths or the injury or sudden illness or death of a valued staff member, are a regular occurrence. Informal "creative bitching" sessions that allow for directed, confidential, cathartic dumping when staff frustrations, usually due to system inadequacy and dysfunction, become intolerable are conducted on an as-needed, requested basis. These peer sessions provide an appropriate arena for the personal ventilation that is often burdensome to or not tolerated in the worker's family or other primary support system. Individual, brief crisis therapy is provided to the staff; referral for long-term therapy is made when appropriate.

Although few empirical data are available to evaluate the outcome of these therapeutic, institutionalized programs, it is the author's belief that the programs work. The institute's low staff turnover rate (almost 20 percent lower than the national average in critical care units and intensive care units) and a strong sense of team identity, especially in the various nursing units, are due in large measure to the effectiveness of these programs.

For field responders, Dr. Jeffrey Mitchell has designed a series of formal debriefing sessions, which he implemented immediately after the Florida airplane crash, the Washington, DC, airplane disaster, and the Barneveld, Wisconsin tornado. Participants have reported that these sessions helped them to better understand their behavior on the scene, to more effectively resolve conflict and deal with their own emotional stress, and to be more understanding of the experiences of their coworkers (Mitchell 1981).

The four important ingredients in Mitchell's sessions are (1) timeliness--emergency workers are brought together usually within 24 hours after the disaster; (2) focus--the sessions deal only with the current feelings such as helplessness, hopelessness, inadequacy, anger, and frustration generated by the event; (3) mutual support--shared personal response and the opportunity to listen to colleagues help to promote an atmosphere of mutuality that manifests itself in an openness to and a caring and concern for other workers; and (4) action--efforts are made to advise the participants on positive, personal actions they can take to ensure their own well-being.

The facilitators of support groups or debriefing sessions need to be aware of the danger of participants relying too heavily on the group process to resolve the stress of emergency work. EMS personnel need to be trained in methods of stress reduction and be made aware that they are personally responsible for their own emotional well-being, just as they are for their own physical health.

There is greater potential to alleviate stress when people are prepared for a personal response to a stressful occurrence. Front door training in stress management and in basic human behavioral responses can provide emergency professionals with a personal safety net that will help them maintain a healthy, steady psychoemotional state.

The institutions responsible for the education and training of EMS personnel can formally address the issue of job stress by incorporating this subject into their curricula. The content of stress management courses should include units on stress reduction techniques; behavioral consequences of an unresolved stressful state; biophysical responses as well as the psychoemotional responses to stress; and development of a personal plan for stress management.

In a basic human behavior course, emergency medical trainees need to know and understand (1) how their own psychoemotional state affects their responses on the job, (2) how stress affects interpersonal relationships, and (3) clinical realities such as the transference/countertransference phenomenon, identification issues, and the typical human defense mechanisms that can either positively or negatively affect job performance. Such a course should heighten awareness of personal motivation for entering the EMS profession, of personal job expectations, and of the need to balance role functions and responsibilities with an emphasis on role-conflict resolution. Such knowledge would be helpful, for example, to the young paramedic, as well as to his concerned colleagues, to recognize that his overidentification and overinvolvement with the parents of a 3-year-old child who was killed by a runaway car are probably due to the paramedic's attachment to his own small child and his unconscious fear of losing that relationship. Awareness and understanding of the meaning behind one's behavior are key to the prevention and/or modification of behaviors that could be counterproductive and even harmful to oneself or others.

Rather than expand training time to include these additional courses, it would perhaps be better to evaluate the curricula of current educational and training programs for the various EMS disciplines and replace courses that are of less value with stress management and basic human behavior courses. Such curriculum enhancement would provide official, institutional recognition and partial resolution of the problem of job stress.

The U.S. Department of Transportation's (1976) *National Training Course for Emergency Medical Technicians* manual has EMT performance objectives written in behavioral terms. The necessity for training in basic human behavior is implied, and such training needs only to include the content suggested earlier. The manual urges that paramedics "discuss their problems and anxieties with co-workers and develop a regular discussion or 'rap' session with peers to discuss good and bad experiences." The Department of Transportation recognizes that something must be done to alleviate the job stress EMS personnel experience. EMS systems and other emergency organizations should implement the ideas of the Federal government in these matters.

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